

LITERATURE OF MANUFACTURERS

Catalogues, bulletins and other direct advertising material recently issued. Manufacturers are requested to send copies of new trade literature promptly to Electric Refrigeration News.

Allen

The Allen Filter Co., Toledo, Ohio, has sent in a loose-leaf catalog which describes nineteen Electro water coolers. Photographs of the coolers appear in the catalog with specifications. Four models are finished in gray enamel and three in porcelain. In addition several pages are devoted to diagrams which show how the coolers operate and to accessory equipment.

Carbondale

Bulletin No. 225, issued by the Carbondale Machine Co., Carbondale, Pa., contains descriptions of two self-contained refrigerating units with two and four-ton capacities. Four photographs show the control and drive sides of the two models. A discussion of the construction features of the self-contained unit, such as the frame, compressor, lubrication, safety valve, condenser, motor and fittings is also included.

DeStaCo

Folder No. 13 received from the Detroit Stamping Co., Detroit, Mich., describes its line of metal stampings. Specifications for dies for making flat and concentric washers are contained in the folder.

Frantz

Eight models of Franz electric water coolers are described in a folder received from the Frantz Refrigeration Co., Reading, Pa. Five of the models are furnished in gray enamel and three in porcelain. A description of the Franz system of cooling water by agitation is also contained in the folder.

Servel

The December 27 issue of Refrigeration, which is published by Servel, Inc., Evansville, Ind., contains a complete description of the 1929 Servel and Electrolux lines. Four new Servel models with capacities ranging from 5 cu. ft. to 10 cu. ft. are illustrated along with seven Electrolux models. In addition three water coolers and two ice cream cabinets are also shown. Photographs of eight compressors, three cooling units and numerous designs of evaporators and vaporizer coils are also contained in that issue.

Halsey W. Taylor Co.

Nine models of electric water coolers are described in Bulletin J received from the Halsey W. Taylor Co., Warren, Ohio. Three of the models are self-contained units and six are designed for remote installation. A discussion of the general specifications is contained in this bulletin. Sanitation in drinking fountains is also treated and the advantages of the two-stream projector are presented. A section which is devoted to water cooling requirements contains two tables for use in figuring different classes of installations.

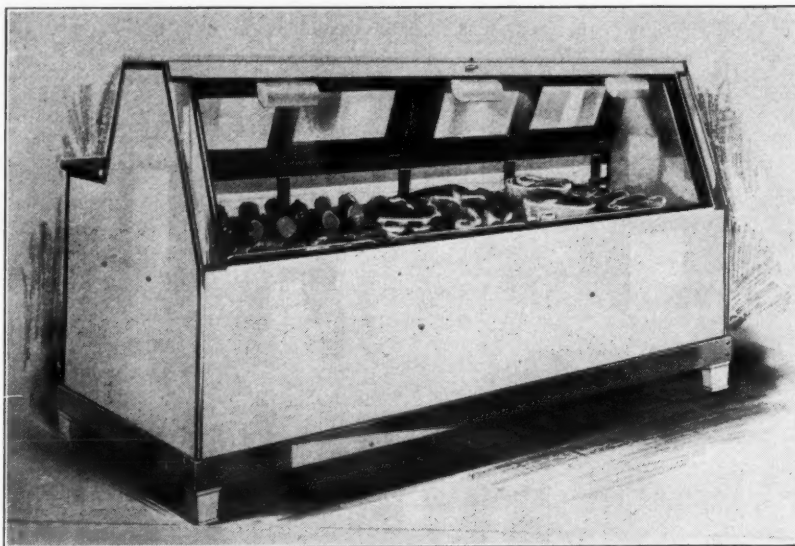
C. J. Webb & Co.

Webb slingabouts for Servel units are described in a circular being distributed by the C. J. Webb & Co., Philadelphia, Pa. The advantages of the use of a slingabout in delivering refrigerators are presented with the aid of eight photographs, four of which show the complete operation of packing the unit in the heavy covering.

Credit Line

In the Jan. 2 issue appeared an article by H. A. Snow of the Detroit Edison Co., entitled "What Electric Refrigeration Means to Central Stations." This article was first presented at the twenty-fourth annual meeting of the American Society of Refrigerating Engineers in New York City. A discussion of it will appear in the February issue of the magazine of the Society, REFRIGERATING ENGINEERING.

Seeger's New All-Porcelain Display Counter



This eight-foot case is in use in one of the largest grocery stores in St. Paul, Minn.

REQUESTS FOR INFORMATION

Readers who can assist in furnishing correct answers to inquiries or who can supply additional information are invited to address Electric Refrigeration News, referring to the query number.

Lead Tinned Tubing

Query No. 174—A concern manufacturing refrigerating equipment in Pennsylvania asks, "Will you kindly give us the names of manufacturers from whom we may purchase lead tinned tubing?"

Cast Iron Pistons

Query No. 175—A subscriber in Cleveland writes, "Please advise me where I can obtain small cast iron pistons suitable for use in SO₂ compressors. I would like to secure some standard lightweight cast iron pistons 1½ inches in diameter."

Query No. 176—A reader in St. Louis inquires, "I wonder whether you can supply me with the street address of the Gas Electric Refrigeration Co., of Cleveland, Ohio, distributors for Servel and Electrolux, mentioned in your Dec. 19 issue."

NOTE—The street address of the Gas Electric Refrigeration Co. of Cleveland, Ohio, is 1812 Euclid Ave.—Editor.

Query No. 177—Wanted, the address of the Ice-Opal, Ltd., Germany, which is reported to sell artificial ice and snow by the keg. It comes in the form of a solid substance and after liquefaction by heat may be poured on a floor where it hardens and is used for skating.

Query No. 178—A subscriber in Madison, Wis., sends in the following request, "I would like to know the names of companies furnishing replacement parts for standard makes of compressors and cooling units. Also those selling condensing or cooling units which may be purchased separately."

NOTE—We refer you to the following: F. B. Riley, factory representatives, 320 Beaubien St., Detroit, Mich., (condensers and cooling units); Pierson Larkin Refrigerating Corp., 515 Ferris St., S. E., Atlanta, Ga., (cooling units); Franklin Air Compressor Corp., Norristown, Pa., (compressors and cooling units); Davies B. & E. Co., Inc., 2016 So. Bancroft St., Philadelphia, Pa., (replacement parts).—Editor.

Address of Knox Mfg. Co.

Query No. 179—A concern dealing in electric refrigeration supplies in New York City writes, "Can you give us the address of the Knox Manufacturing Co., makers of a lid for ice cream containers? We think they are located in western Pennsylvania."

Query No. 180—A reader in Milwaukee, Wis., sends in the following request, "I am interested in electric refrigeration and would like to have you give me a list of your special books that you publish and also the prices of each."

NOTE—We refer you to page 21 of the January 2 issue of ELECTRIC REFRIGERATION NEWS on which there appeared a list of books on refrigeration and related subjects, with prices for each.—Editor.

W. J. Hanley and C. K. West Elected Commercial Vice Presidents of G. E.

At a meeting of the board of directors of the General Electric Co. on Jan. 4 in New York, two commercial vice presidents were elected. William J. Hanley, manager of the East Central district with headquarters in Cleveland, Ohio, and Charles K. West, manager of the Atlantic district with headquarters in Philadelphia, Pa., were elected vice presidents in charge of the commercial activities in their respective districts.

Company Formed in San Antonio to Handle Frick Equipment

The Refrigerating Equipment Co. has been organized in San Antonio, Tex., to distribute Frick refrigerating equipment. Officers of the new firm are E. W. Staph, president; F. P. Gerling, vice president and C. Y. Blacknall, secretary and treasurer. Mr. Staph formerly had charge of the Frick line for the San Antonio Machine & Supply Co.

LOWELL G. E. DISTRIBUTOR OPENS NEW DISPLAY ROOMS

The Eastern Service Refrigerator Co., Lowell, Mass., opened new display rooms at 117 Merrimack St., Dec. 15. The company has been distributor of General Electric refrigerators for the last year with location at 47 E. Merrimack St. H. P. Halvorsen is president of the concern and R. A. Sovik is sales manager.

Favors were presented everyone attending the opening and frozen dessert was served. The feature of the opening was the allowing of \$100 toward an RT-7 General Electric refrigerator to the lucky guest. Sparklets syphons with two dozen refills were also awarded.

W. H. Moss Heads Service Dept. of Greenwood Distributor

W. Hall Moss has recently been appointed serviceman of the H. S. Compton Co., Greenwood, Miss., Frigidaire distributors. The company was organized four years ago and the service and installation department were reorganized and enlarged the beginning of the year.

NEW DEALERS & DISTRIBUTORS

Recent appointments announced by manufacturers and new sales outlets reported from the field.

Frigidaire

Distributors: Hallada Electric Co., New London, Wisc.

Dealer: Charles B. Dillon, Rosenberg, Tex.

Sparklets, Inc., New York, N. Y.

Distributors: Newton-Parsons Co., 123 Ann St., Hartford, Conn. Central Union Gas Co., 529 Courtlandt Ave., New York, N. Y. Iron Mountain Co., 539-1011 E. 95th St., Chicago, Ill.

Dealers: M. P. Homan, 2503 Perkiomen Ave., Mt. Penn, Pa. Texas Power & Light Co., Nacogdoches, Tex. Electric Refrigeration Sales & Service Co., 2254 Church Ave., Brooklyn, N. Y. Chesney Servel Co., 204 N. Morton St., Okmulgee, Okla. Utica Gas & Electric Co., Utica, N. Y. Electric Management & Engineering Corp., 57 William St., New York, N. Y. Southwest Utility Ice Co., Stillwater, Okla. Leon J. Barrett Co., Worcester, Mass. Meyer & Alexander, Marion, Ind. Gordon L. Hayes, 407 Fulton St., Troy, N. Y. Southern Public Utilities Co., Charlotte, N. C. Gill & Davis, 154 Merchant St., Decatur, Ill.

Kelvinator of Canada, Ltd., London, Ont.

Dealers: D. C. Harcourt, 2150 Queen St., Toronto, Ont. J. D. Bisson, Lake Megantic, Ont. J. R. Y. Broughton, Newmarket, Ont. W. F. Craig, Woodstock, Ont. Rolfe's, Limited, Swift Current, Sask. International Paper Co., Temiskaming, Que. Canada Power Corp., New Liskeard, Ont. Northern Ontario Light & Power Co., Ltd., Cobalt, Ont. Haliburton, Ont.: New Liskeard, Ont.; Timmins, Ont., and Kirkland Lake, Ont. Northern Quebec Light & Power Co., Ltd., Rouyn, Que. Wright Piano Co., Strathroy, Ont. Bruce Rogers, Walkerton, Ont. Higgins & Large, Brampton, Ont. Sims Hardware Co., Grimsby, Ont. Wanless Hardware Co., Chatham, Ont. Imperial Radio Co., Sault Ste. Marie, Ont. Urry Bros., Barrie, Ont. Frontier Radio Electric Co., 485 Queen St., Niagara Falls, Ont. The Radio Shop, Kingston, Ont. Saunders Electric Co., Kingston, Ont. Codere, Limited, Sherbrooke, Que. J. D. Hamel, Magog, Que. J. N. Shanahan-Lambert Co., St. Lambert, Que. Howard Bros., Ltd., 50 Queen St., Kitchener, Ont. Walkerton Elec. Lt. & Pwr. Co. Store, Walkerton, Ont. Sauble Falls Light & Power Co., Wiarton, Ont. Saugeen Light & Power Co. Store, Port Elgin and Southampton, Ont. Electric Utilities, St. Catharines, Ont. Murphy Electric Co., Victoria, B. C. McMurtry Hardware, Ltd., St. Thomas, Ont. Barber & McNichol, Orangeville, Ont. Abitibi Power & Paper Co., Iroquois Falls, Ont.

D. C. Harcourt, 2150 Queen St., Toronto, Ont. J. D. Bisson, Lake Megantic, Que. J. R. Y. Broughton, Newmarket, Ont. W. F. Craig, Woodstock, Ont. Rolfe's, Limited, Swift Current, Sask. International Paper Co., Temiskaming, Que. Canada Power Corp., New Liskeard, Ont. Nor. Ont. Lt. & Power Co., Ltd., Cobalt, Ont. Nor. Ont. Lt. & Power Co., Ltd., Haileybury, Ont. Nor. Ont. Lt. & Pwr. Co., Ltd., New Liskeard, Ont. Nor. Ont. Lt. & Pwr. Co., Ltd., Timmins, Ont. Nor. Ont. Lt. & Pwr. Co., Ltd., Kirkland Lake, Ont. Nor. Que. Lt. & Pwr. Co., Ltd., Rouyn, Que. Wright Piano Co., Strathroy, Ont. Mr. Bruce Rogers, Walkerton, Ont. Higgins & Large, Brampton, Ont. Sims Hardware Co., Grimsby, Ont. Wanless Hardware Co., Chatham, Ont. Imperial Radio Co., Sault Ste. Marie, Ont. Urry Bros., Barrie, Ont. Frontier Radio Elec. Co., 485 Queen St., Niagara Falls, Ont. The Radio Shop, Kingston, Ont. Saunders Electric Co., Kingston, Ont. Codere, Limited, Sherbrooke, Que. J. D. Hamel, Magog, Que. J. N. Shanahan-Lambert Co., St. Lambert, Que. Howard Bros., Ltd., 50 Queen St., Kitchener, Ont. Walkerton Elec. Lt. & Pwr. Co. Store, Walkerton, Ont. Sauble Falls Lt. & Pwr. Co. Store, Wiarton, Ont. Saugeen Lt. & Pwr. Co. Store, Pt. Elgin, Ont. Electric Utilities, St. Catharines, Ont. Murphy Electric Co., Victoria, B. C. McMurtry Hardware, Ltd., St. Thomas, Ont. Barber & McNichol, Orangeville, Ont. Abitibi Power & Paper Co., Iroquois Falls, Ont.

THE CONDENSER

ADVERTISING RATE fifty cents per line (this column only).

SPECIAL RATE if paid in advance—Positions Wanted—fifty words or less, one insertion \$2.00, additional words four cents each. Three insertions \$5.00, additional words ten cents each. All other classifications—fifty words or less, one insertion \$3.00, additional words six cents each. Three insertions \$8.00, additional words sixteen cents each.

POSITIONS AVAILABLE

Wanted—Kelvinator salesman with knowledge all branches of commercial business. Southern territory. Give full details. Box No. 134.

Wanted—Refrigeration engineer who must be graduate of technical school on refrigeration course. Must have had at least two years experience in designing small household refrigeration equipment. Servel, Inc., Engineering Department, Evansville, Indiana.

POSITIONS WANTED

Refrigeration engineer, with eight years' experience in electric refrigeration, includes research engineering, production and service. Graduate Electric and Mechanical Engineer. Have held major executive positions with three of the largest manufacturers. Available when greater opportunity is offered. Box No. 119.

PURCHASING EXECUTIVE—Now available with 12 years purchasing experience. Last 8 years with one of leading electric refrigeration manufacturers. Has a wide acquaintance with sources of supply. Can furnish references from last employer. Address Box No. 128.

Sales Engineer. Extensive domestic and foreign refrigeration sales experience, conversant of Spanish, French and German, seeks position introducing refrigeration equipment in foreign countries. Member Am. Soc. Refr. Engrs. since 1916. Address Box No. 135.

FOR SALE

For Sale. Kelvinator franchise for three counties in central Pennsylvania. Owner desires to engage in manufacturing business. This is worth investigation. Box 131.

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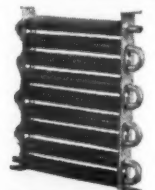
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Please enter subscription to Electric Refrigeration News.

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ELECTRIC REFRIGERATION NEWS

The business newspaper of the refrigeration industry

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COMMERCIAL CABINET MAKERS HOLD WINTER MEETING IN DETROIT

Discuss Plans for Co-operation With Machine Manufacturers

Twenty-six members of the Commercial Refrigerator Manufacturers Association attended the two-day winter meeting held at the Hotel Statler, in Detroit, on January 21-22. Chairman H. C. Ahrens, of the C. Schmidt Co., Cincinnati, Ohio, presided at the several business sessions.

A co-operative plan of work with the manufacturers of refrigerating machines was discussed at the meeting. R. E. Ottenheimer, of Ottenheimer Bros., Inc., Baltimore, Md., read a paper discussing the reasons why it is advisable for the manufacturers of refrigerators and machines to take some action towards co-operation.

The following concerns are members of the Commercial Refrigerator Manufacturers Association:

Banta Refrigerator Co., Clearfield, Pa.
Chadwick & Carr Co., Boston, Mass.
Cincinnati Butchers' Supply Co., Cincinnati, Ohio.
Detroit Butcher Supply Co., Detroit, Mich.
Downing Mfg. Co., Downing, Wis.
Dry-Kold Refrigerator Co., Niles, Mich.
H. Ehrlich & Sons Mfg. Co., St. Joseph, Mo.
Elkins Refrigerator & Fixture Co., Cleveland, Ohio.
Ed. Friedrich, San Antonio, Tex.
Bernard Gloekler Co., Pittsburgh, Pa.
Gustav J. Gruendler Mfg. Co., St. Louis, Mo.
C. V. Hill & Co., Inc., Trenton, N. J.
Ligonier Refrigerator Co., Ligonier, Ind.
McCray Refrigerator Co., Kendallville, Ind.
Northey Manufacturing Co., Waterloo, Iowa.
Ottenheimer Bros., Inc., Baltimore, Md.
C. L. Percival & Co., Des Moines, Iowa.
St. Louis Butchers' & Hotel Supply Co., St. Louis, Mo.
C. Schmidt Co., Cincinnati, Ohio.
Sherer-Gillet Co., Chicago, Ill.
Standard Refrigerator Co., Philadelphia, Pa.
Viking Refrigerators, Inc., Kansas City, Mo.
Warren Co., Atlanta, Ga.
A. C. Wicke Mfg. Co., New York, N. Y.

MERCHANDISING BUREAU OF N. E. L. A. COMMITTEE WILL MEET IN DETROIT

F. D. Pembleton, chairman of the Merchandising Bureau of National Electric Light Association, Refrigeration Committee, has called a general meeting, which will be held at the Book-Cadillac Hotel, in Detroit, on February 5-6. It is planned that the first day be devoted to committee meetings and the second to a discussion of subjects by the entire bureau.

Meeting of Detroit Section of A. S. R. E. is Postponed

The meeting of the Detroit Section of the American Society of Refrigerating Engineers, originally scheduled for Feb. 4 has been postponed until Feb. 12. A. J. Wood, president, and David E. Fiske, secretary, of the national organization will be present at the meeting.

McCray Makes Elaborate Installation In Dallas Grocery



The array of McCray refrigerated display equipment shown above was recently installed in the Hunt Grocery Co., Ervay and Pacific Sts., Dallas, Tex. Electric refrigeration is used in the cases. This store, recognized as one of the leading food stores in the Southwest, is doing a volume of business in excess of \$75,000 annually.

Grocery Stores Readily Appreciate the Advantages of Electrically Refrigerated Display Equipment



The Grand Avenue Grocery Co., St. Paul, Minn., uses two Seeger display counters, electrically refrigerated, for their display of smoked and fresh meats.

KELVINATOR OPENS SERIES OF DEALER MEETINGS ON FEB. 8

21 Sessions Scheduled

The annual series of Kelvinator dealer conventions to be held in twenty-one cities from coast to coast and which will be attended by more than 4,000 dealers and distributors opens with the first meeting at Detroit on February 8.

The 1929 Kelvinator line will be announced and displayed at the meetings, and sales and advertising plans for the coming year will be presented and discussed.

The factory officials who will address the various meetings are: H. W. Burritt, J. M. Fernald, J. A. Corcoran, R. E. Densmore, J. S. Sayre, H. A. Sieck.

The schedule of meetings from February 8 to 27 follows:

February 8—Detroit.
February 11—New York, Chicago, St. Louis.
February 12—Boston.
February 13—Charlotte, Oklahoma City, Minneapolis, Los Angeles.
February 14—Baltimore.
February 15—Pittsburgh, Jacksonville, Ft. Worth, Omaha.
February 16—San Francisco.
February 18—Kansas City, San Antonio.
February 20—Seattle.
February 22—Boise.
February 23—Salt Lake City.
February 27—Denver.

FEATURES FOR FEB. 13

In the Feb. 13 issue special attention will be given to restaurant applications of electric refrigeration. The product feature will be electric wiring and supplies such as, conduit, armored cable, and safety switches.

4 MANUFACTURERS OF CONTROLS MERGE

Time-O-Stat Controls Co. to Have
Headquarters at Elkhart, Ind.

Announcement is made of the formation of the Time-O-Stat Controls Co., Elkhart, Ind., through the consolidation of the Leachwood Co., Janesville, Wis., the Time-O-Stat Corp., Milwaukee, Wis., the Absolute Con-Tac-Tor Corp., Elkhart, Ind. and the Cramble Engineering Corp., Milwaukee, Wis.

The four concerns in this merger will operate their respective plants for the next few months as divisions of the new company and by the middle of this year all four will be consolidated in one factory at Elkhart. Officers of the Time-O-Stat Controls Co. are as follows: Julius K. Luthe, president and treasurer; A. I. Wallace, Paul K. Cramble, E. J. Leach and Roy W. Johnson, vice presidents.

This merger combines manufacturers of kindred products, but with few duplications. The Leachwood Co. manufactures metal bellows, thermostatic and pressure elements, refrigerator diaphragms, compressor seals, pressure and thermostatic controls, while the Cramble Engineering Corp. are manufacturers of sign flashers and mercury tube switches. The Time-O-Stat Corp. produces a line of boiler controls and the Absolute Con-Tac-Tor Corp. are manufacturers of mercury tube switches and a line of controls for oil burners and refrigerators.

Plans have been made to enlarge the plant and offices at Elkhart, Ind. A separate building will be erected for laboratory, experimental and development work.

PHILADELPHIA SECTION A. S. R. E. HEARS NATIONAL OFFICERS AT MEETING

Papers Read on Compressor
Valves and Solid Carbon
Dioxide

About 47 members of the Philadelphia section of the American Society of Refrigerating Engineers attended a dinner and technical session which was held at the Engineers Club in Philadelphia on January 18. Following the dinner short talks were given by Arthur J. Wood, national president of the A. S. R. E.; A. H. Baer, national vice-president of the society, and David E. Fiske, national secretary. All three speakers emphasized the possibilities of the local section and outlined what could be expected by the (Concluded on page 4, column 3)

WOODBIDGE LEAVES KELVINATOR; MASON NOW IN FULL CHARGE

Number of Directors Reduced
From Twenty-one to Ten

DIRECTORS of Kelvinator Corporation, Detroit, re-elected George W. Mason chairman of the board and also made him president on January 21. In the latter position Mr. Mason takes the place of C. K. Woodbridge, who declined to accept re-election as president.

Speaking of his action Mr. Woodbridge said: "For the past two years the objective of this corporation in this new industry of electric refrigeration has been to focus on the problems necessary to economic co-ordination of all the operations of Kelvinator and the promotion of better relations within the industry at large.

"With the knowledge that these purposes have been attained and in the spirit of friendly desire to permit the utmost freedom of action to my friend, Mr. G. W. Mason, recently elected chairman, in the operation of the corporation's business, I desire to retire.

"This corporation has in Mr. Mason a leader whose engineering and manufacturing experience in the automotive field, and especially in electric refrigeration, qualifies him for leadership in this industry which is so rapidly developing new applications for electric refrigeration. The Kelvinator organization will respond because of Mr. Mason's sincerity and enthusiasm. To all those who as stockholders, directors, supporting bankers and associates have so earnestly cooperated in aiding us to reach our objective, I wish to express my sincere thanks and appreciation.

"From now on I can be found at 25 Broad St., New York City, where I shall be doing special work for Prince and Whitely, bankers."

Stockholders at their annual meeting preceding the board meeting reduced the number of directors from 21 to 15. The directors at a later meeting voted to still further reduce their number from 15 to 10. The 10 consist of J. S. Bache, F. C. Finkenstaedt, A. H. Goss, J. M. Hoyt, D. B. Lee, G. W. Mason, W. D. Mercer, H. T. Pierpont, Ernest Stauffer, Jr. and Merlin Wiley.

The following men who were elected directors by the stockholders do not appear in the final list: R. A. Lundquist, C. C. Spreen, G. E. Rogo, D. G. Ellis and R. I. Petrie.

Lipman to Make Plant Addition

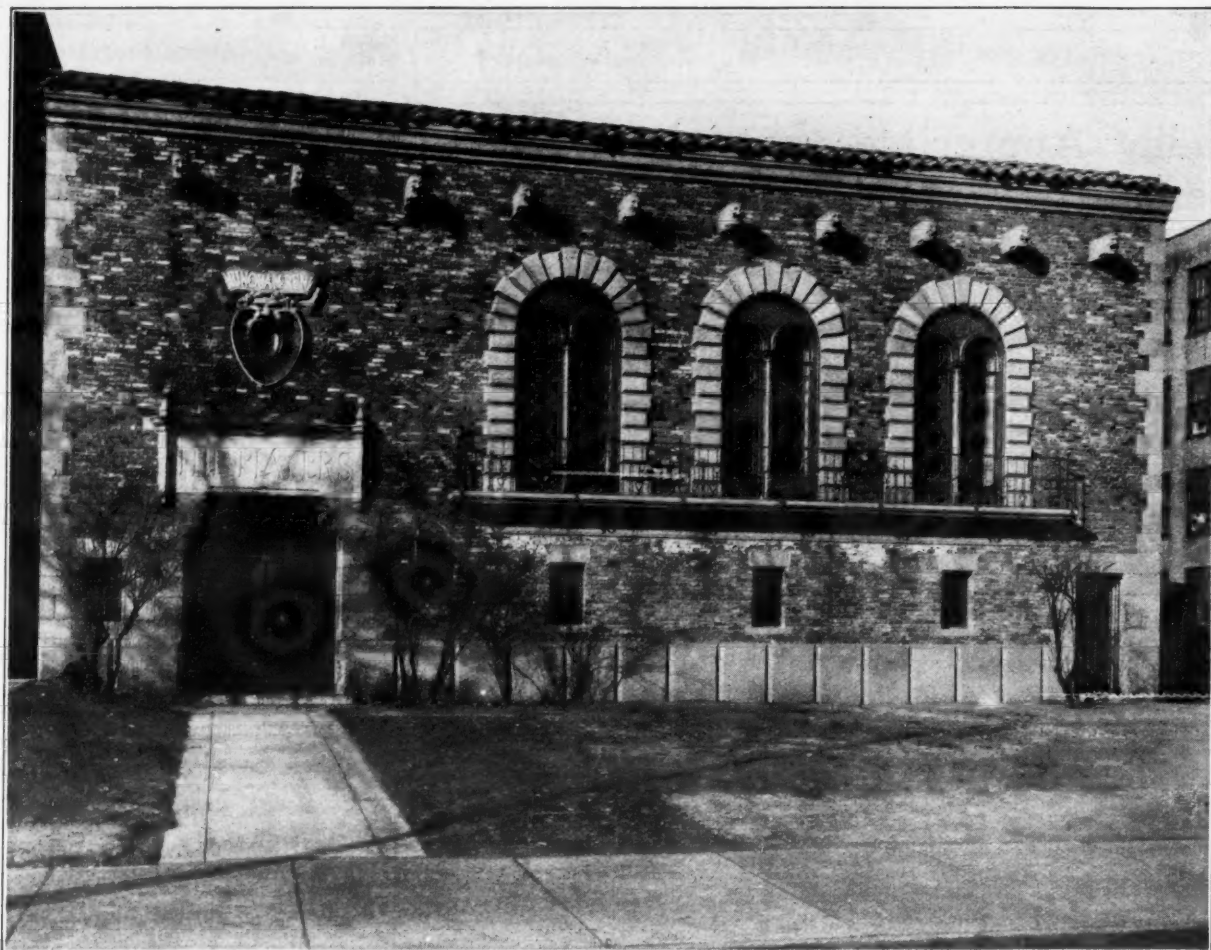
The General Refrigerating Co., Beloit, Wis., manufacturers of Lipman refrigerating machines, has announced that it will erect a large addition to its plant this coming spring.

Grocery in London Suburb Knows Convenience of Kelvinator



A Kelvinator system provides refrigeration for this 100 cu. ft. refrigerator in the grocery operated by Ben Jones & Co., Fulham, England, a suburb of London. The condensing unit is located in the basement.

Where Copeland Men Meet, Feb. 5, 6



Sessions of the Copeland Products, Inc., convention will be held Feb. 5 and 6 in the Players' Club, East Jefferson Ave., Detroit. More than 2,000 distributors and dealers have been invited to attend. It is the first time dealers have been brought into a convention. Among the groups who have engaged special Pullmans are Copeland of New York, Copeland St. Louis Co., and Thomas J. Northwas of Rochester. The visitors will make their headquarters at the Statler hotel.

CHICAGO WAYNE BRANCH DISCUSSES 1929 PLANS AT MEETING ON JAN. 15

Sixty dealers and special representatives of the Chicago branch of the Wayne Home Equipment Co. met at the Stevens Hotel, Jan. 15. An enthusiastic meeting followed a banquet.

John J. Berghoff, general manager, outlined plans and policies of the company for the year 1929. Mr. Berghoff stated that the company had enjoyed a fine business in the last year and that practically all departments in the factory had been working on a twenty-four hour schedule.

Mr. Berghoff was followed by G. T. Pearce and R. H. Ring of the Dry Zero Corp., 130 N. Wells St., Chicago. They spoke on the properties and characteristics of Dry Zero insulation which is used in the new Wayne cabinets. D. Gray Walmsley spoke on quotas and apportioned the quotas for the organization in metropolitan Chicago. Harry Adams closed the meeting with an address on "Team Spirit."

400 FRIGIDAIRE MEN WILL ATTEND DISTRICT MEETING AT FORT WORTH ON FEB. 6

Plans are being completed for a regional meeting of Frigidaire salesmen and representatives to be held in Fort Worth, Texas, on February 6. Approximately 400 salesmen from Fort Worth, Dallas, San Antonio, El Paso and Oklahoma City will attend the meeting, which is called for the purpose of discussing sales plans and policies for the current year. A group of 20 officials from the Frigidaire factory, headed by J. A. Harlan, distributor sales manager, will attend the session. This will be one of a series of ten such meetings to be held throughout the country.

ESCO SALES MEETING REPORTS POINT TO GOOD YEAR IN 1929

The Esco Cabinet Co., West Chester, Pa., manufacturers of Esco Electric Milk Cooling cabinets, held a sales convention Dec. 27, 28 and 29.

The entire sales force, as well as some of the large distributors, attended and reports were given pointing toward a successful ensuing year from all sections. A sales policy for 1929 was outlined.

Kelvinator Schedules Factory Service Schools

Kelvinator Corp., Detroit, will hold domestic and commercial refrigerator and ice cream cabinet service schools during the months of February and March. The various schools are scheduled to open as follows: Domestic, Feb. 4 and 18, March 4 and 18; Commercial, Feb. 11 and 25 and March 11 and 25; Ice Cream Cabinet, Feb. 4 and 18 and March 4 and 18.

INSULITE GETS LARGE ORDERS FOR REFRIGERATOR CAR INSULATION

The Insulite Company, Builders' Exchange, Minneapolis, Minn., has recently been awarded several contracts covering large orders of Insulite for refrigerator car insulation.

Among the installations are: Pennsylvania Railway, all-steel refrigerator express cars; American Refrigerator Transit, refrigerator cars; Armour & Company, refrigerator cars; A. T. & S. F., refrigerator cars; General American, refrigerator milk cars.

G. E. ADDS KITCHEN PLANNING SERVICE FOR DISTRIBUTORS

A kitchen planning service has been added by the General Electric Co. as a part of the Apartment House Division. Through this service the distributor or dealer is enabled to offer to the builder, contractor, architect, or apartment house owner a complete layout of a kitchen arrangement designed to fit their particular requirements and designed, of course, to include electric refrigeration.

Copeland Holds Service School for Convention Delegates

A service school, following the Copeland sales convention, February 5-6, is planned by the Copeland Products, Inc., Detroit, for February 7. It will be continued several days and will be under the direction of Edward Barger, service manager. The school was arranged so that the distributors and dealers attending the convention from all parts of the United States and Canada might have a chance to get in touch with the latest developments in electric refrigeration. The first three days of the school will be devoted to multiple and commercial installations, while household and general service will be taken up the following week.

Three Refrigerator Car Companies Are Merged

A merger agreement has been made between the Northern Refrigerator Car Co., Cudahy Company, and Merchants Dispatch, Inc., of Rochester, N. Y. Under the merger, Cudahy is succeeded by Northern Refrigerator Line, newly organized by Merchants Dispatch, Inc., which in turn is owned by the New York Central railroad.

Merchants Dispatch, Inc., own and operate 16,000 refrigerators and the Northern Refrigerator Car Co. operates 3,500 freight refrigerators and 300 express refrigerators.

**?Why glue ice
cubes to metal**

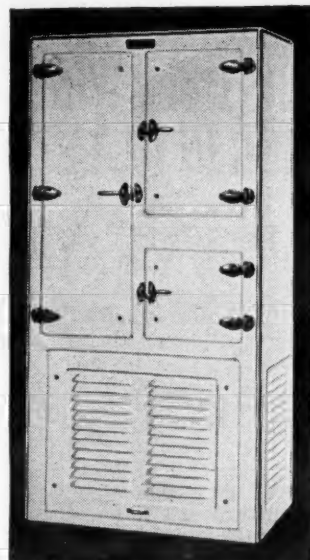
The Bohn Franchise

For those dealers who appreciate the merchandising possibilities of a nationally known, and very complete, line of refrigerators.

During thirty-two years of quality manufacturing, the BOHN organization has been responsible for over eighty per cent of the scientific advance in refrigerator construction.

BOHN was the first to build an all-porcelain refrigerator and is today the world's largest manufacturer of these beautiful and practical cabinets.

A large production enables us to offer the lowest prices in the company's history.



All-porcelain base cabinet models in 5-6-7-9 and 12 cubic feet

Nothing finer can be said of a refrigerator than
"It was built by BOHN."

BOHN REFRIGERATOR COMPANY
SAINT PAUL, MINNESOTA

NEW YORK

CHICAGO

BOSTON

FRANKLY NOW...



...How
would you
like to sell
an Electric
Refrigerator
that costs -
15% less to
operate?..



With every other detail of construction practically equal, what would a 15% increase in performance mean to you and your sales? It would mean an increase... it would give you a definite sales advantage that would be hard to beat... In short, it would mean that your refrigerator is more nearly perfect than those you must sell against.

There's no use beating around the bush... Dry-Zero used as insulation in the walls of your unit will give that greater performance... an efficient heat stop where 80% of the heat gets in. Dry-Zero is from 20% to 40% by test, more effective than any known commercial insulant. It strikes at the very heart of your greatest problem—heat penetration. It is odorless... and will not crack, shake down or otherwise lose its insulating efficiency.

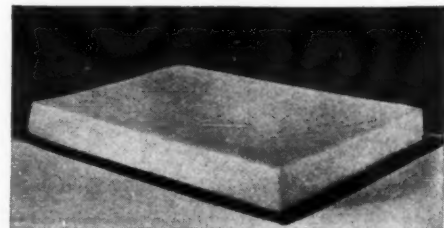
Correct insulation is vitally important to you... it is still more important to your customer... if you show them why and how. Dry-Zero gives them lower operating costs and you increased sales... for the deciding factor of refrigerator efficiency is the cabinet insulation. It can also be made the deciding factor in your sale.

Ask for full details of this remarkable insulant. In many senses of the word, it is the greatest development in the entire history of electric refrigeration.

DRY-ZERO CORPORATION

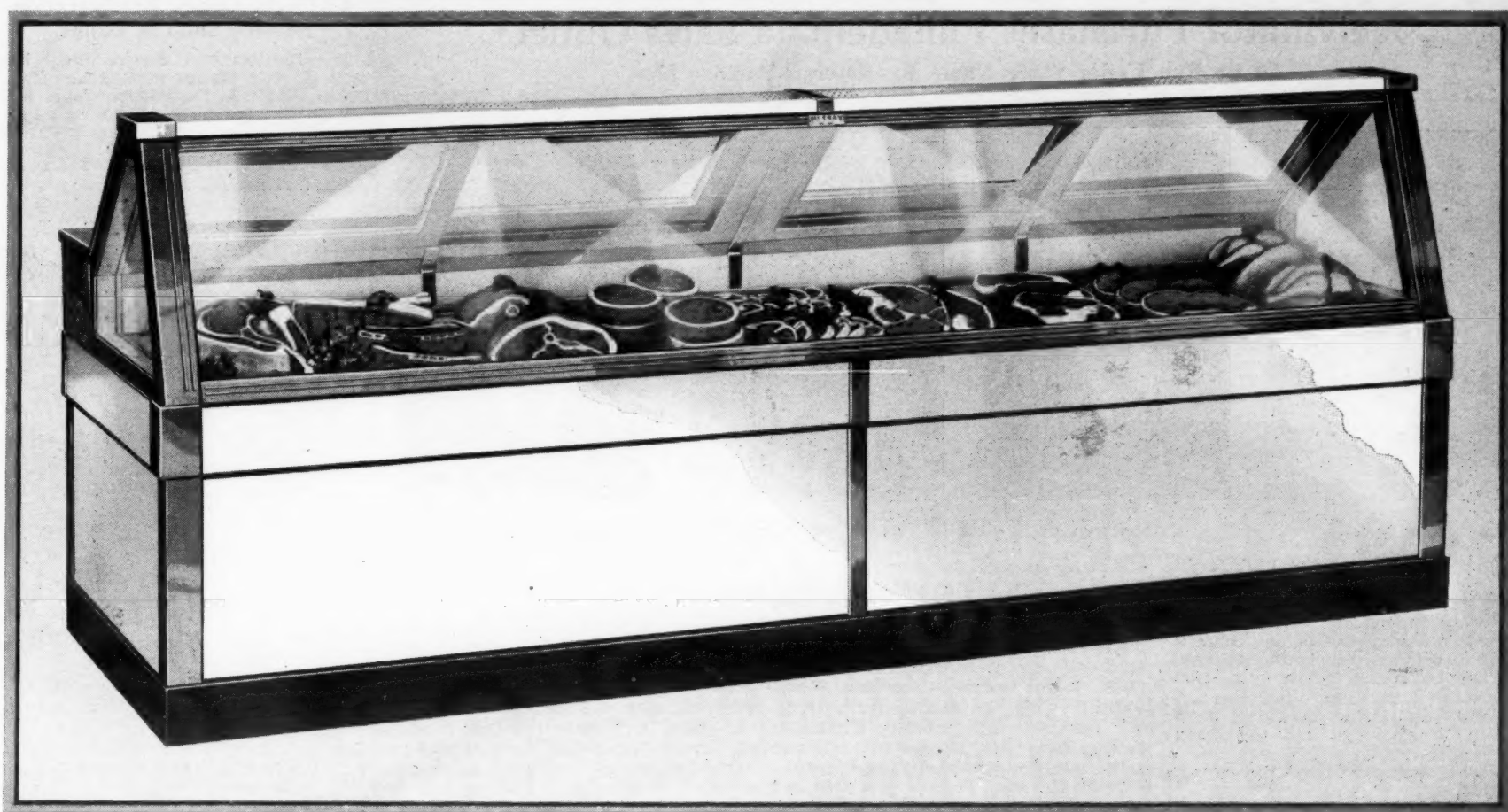
130 N. WELLS ST.

CHICAGO, ILL.



DRY-ZERO

THE NEW McCRAY Refrigerator Display Case No. 105; white porcelain exterior with handsome black base; modelled monel-metal trim; two courses plate glass sealed air-tight; electric illumination; corkboard insulation. For ice, or machine of any type.



For Use With Any Machine McCray Equipment for Food Stores

A VAILABLE for use with any type of mechanical refrigeration, McCray equipment for food stores assures a satisfied customer.

When a machine is installed in a McCray display case, refrigerator, or cooling room, that machine has the chance to do its best work both in efficiency and economy.

Quality Clear Through

McCray standards of construction, the quality which goes through to every hidden detail—make it possible to maintain the required temperatures at a

minimum cost of operation. And foods are kept pure, wholesome, tempting in their original freshness and flavor.

McCray prestige among food merchants is the result of a lifetime of real service. From all over the country come stories from grocers and meat dealers about more business and bigger profits with McCray equipment.

Unsolicited, enthusiastic and SINCERE testimonials to the real service of McCray refrigerators. Every one witnessing that McCray serves merchant and the public alike, keeping foods better, SAVING MONEY, PROTECTING HEALTH! In 40 years of fine refrigerator building this has been the McCray ideal.

For Every Purpose

McCray builds refrigerators for every purpose—in food stores, hotels, restaurants, clubs, hospitals, institutions, florist shops, and homes. Every model built to the same high standard in every hidden detail. And every one available

McCRAY
REFRIGERATORS
FOR ALL PURPOSES

For

Grocery Stores.
Meat Markets.
Hotels · Restaurants · Hospitals.
Institutions · Florist Shops.
Homes

for use with electric or mechanical refrigeration of any type.

The widespread acceptance of the McCray nameplate as the sterling mark on commercial refrigerators is a source of profit as well as prestige to the dealer in machine refrigeration.

Machine Dealers Write

Get all the facts about McCray refrigerators for all purposes. See the new models on display in McCray salesrooms. Send for latest catalogs. No obligation.

McCRAY REFRIGERATOR SALES CORPORATION

Dept. 66, Kendallville, Ind.

Salesrooms in All Principal Cities (See Telephone Directory)

WORLD'S LARGEST MANUFACTURER OF REFRIGERATORS FOR ALL PURPOSES

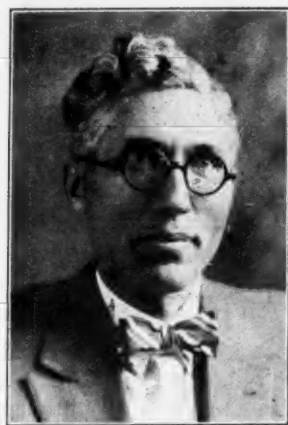


A food store interior showing the McCray equipment, including display case refrigerators and large storage cooler.

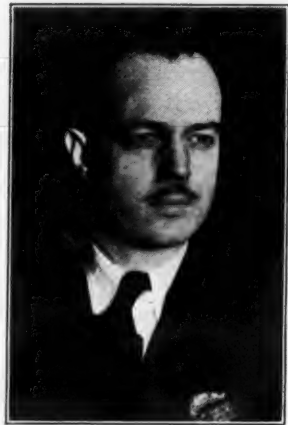
McCRAY REFRIGERATORS

Kelvinator Purchases Philadelphia Sales Outlet

To Be Run Under Same Name By Veteran Factory Men



G. E. ROGO



J. W. HUMMER



G. W. MOISTER



CAMPBELL WOOD

Purchase of Kelvinator-Philadelphia, Inc., 36 South Seventeenth Street, by the Kelvinator Sales Corporation of Detroit was announced yesterday. With its acquisition by the parent company, the Philadelphia distributing organization now becomes a factory unit. Operation of the business, which serves a territory comprising southern Jersey, eastern Pennsylvania and the eastern shore of Maryland, will be continued at the same address under the existing name.

Kelvinator-Philadelphia, Inc., which is

one of the oldest Kelvinator sales groups in the country, will be under the direction of the following officers: Campbell Wood, president and also the Kelvinator district sales manager; George W. Moister, vice-president and general manager; G. E. Rogo, secretary-treasurer. These, together with the service manager, J. W. Hummer, are veteran Kelvinator factory men. Mr. Moister formerly was sales manager for the district organization in Chicago. For the last year and a half he has represented Kelvinator on

the Pacific coast.

Sales are now in charge of the following: J. D. DeLaney, apartments and builders; Charles Logan, commercial sales; Maurice Webb, domestic sales; and Col. E. H. Wagner, wholesale. These sales managers all are men of long experience in the Philadelphia territory. The sales organization which handles the entire Kelvinator line of domestic and commercial refrigerators, automatic electric refrigeration equipment, and ice cream cabinets, is to be kept intact.

Improved Grocery Refrigerators Made Necessary by Changes in the Grocery Business

Keeping of Large Stocks of Perishables Requires Exact Temperatures Provided by Electric Cooling

By Gerald S. Bataille
Director of Application,
Harry L. Hussmann Refrigerator Co.

THE grocery business has undergone a considerable change during the past ten or fifteen years. People today are looking for the very greatest of convenience and comfort even in their shopping. Butter and lard in cartons, eggs in cartons, milk in bottles. In fact it is the package age. Gone, to a considerable extent throughout the country, are the tubs of butter and lard, the crates of eggs and the 10-gallon cans of milk. Likewise, the refrigerator of today, for the modern grocer, has undergone some radical changes.

Going back twenty years, practically the only type refrigerator seen in a grocery store had the "lift" type of door, having three, four and sometimes five or six compartments in a row for tubs of butter in different grades, lard and the like. Above these lifts or compartments were smaller doors with very shallow compartments for sundry articles more or less requiring refrigeration.

It might be stated here that these refrigerators were very poorly insulated, having so-called "dead air" space, or two thicknesses of one-inch lumber with builders' paper between to resist heat.

The additional cost of ice to refrigerate such a grocery box would pay for good cork insulation several times over in one year. Just recently a manager of a small grocery store told me that his old box was as good as any of them. It consumed only 150 pounds of ice a day in the summer time. Think of it! Over two tons of ice a month to refrigerate a small hundred cubic foot box. And his temperatures were generally well above 50 degrees.

But this type of refrigerator and grocer is very rapidly being replaced by the modern refrigerator and grocer. The modern type refrigerator has a straight front, generally with six to nine glass doors each fitted with three lights of glass, and the doors gasketed. Some have double gaskets as further resistance against heat leakage around the doors. These refrigerators are well insulated with from 2 to 3 inches of high grade insulation. They have slides providing suitable means of accommodating two tubs of butter and lard if the grocer so wishes to use these commodities in bulk.

The balance of these compartments permits a very fine display of small package goods, such as package butter, lard, cream, milk, all kinds of cheese, yeast, and smoked meats, if the grocer cares to handle same.

In cases where the grocer wishes to have a more or less complete line of smoked meats, bacon and the like, a larger compartment is provided by converting two or three of the doors into one large door. Many grocers are using top display cases for this type of refrigeration, as they prefer it rather than have the refrigerator where display of such meats may not be quite as attractive. There is no question but that "display is the thing." It's the silent salesman.

Now comes the difficulty or simplicity of refrigeration. With the old type refrigerator, with the arched or curved doors, and little or no insulation, the bunker compartment (cooling chamber) was located at the top of the refrigerator. This is the logical place for it, so that the cold would fall and chill the contents of the refrigerator beneath this compartment. So, old fashioned as this refrigerator might be, it had the correct location for the bunker compartment.

With the modern type of refrigerator we find the bunker compartment generally located in the center of the box, and extending from half-way from the top to the top of the refrigerator. Food compartments are arranged on both sides of this compartment, and underneath. The underneath compartments receive the greatest benefit of the refrigerator, the upper compartments being several degrees warmer. It therefore calls for a little good judgment as to what is the best to place on the bottom shelves and what, or what not, to put on the upper shelves.

Eggs, unless they are cold storage, should not be placed in any refrigerator. They should be kept at about 50 to 60 degrees. When the upper shelves in the refrigerator run above 50 degrees, it is then safe to place the eggs in these compartments. Otherwise they are likely to remain in better condition out in the store in fresh cool air.

Cheese can be kept on these upper shelves very nicely. It is the proper place for cheese, as its odor is not likely to contaminate the butter and other foodstuffs when placed on the uppermost shelves.

All meats should be kept near the lower part of the refrigerator where the temperatures are lowest. The butter should be kept to the opposite end from the meats. Milk and creams should be kept near the butter, and may be kept on the upper shelves.

No food should at any time be placed in the cooling chamber compartment. Every grocer and butcher too will do this. But it is a serious mistake. Food in the cooling compartment just ruins air circulation, proper functioning of the cooling element, and no food can be properly kept in the food compartments when the cooling chamber has food in it blocking up the air. If the refrigerator temperature is not as low as it should be for one particular kind of food, there is no need of spoiling the

(Concluded on page 9, column 2)

SUBSIDIARIES OF CITY SERVICE REPORT SALES OF 6,438 UNITS IN '28

The 1928 reports from the new business department of the subsidiaries of Cities Service Co., New York, N. Y., show that a total of 6,438 electric refrigerators were sold. Of this total approximately 70 per cent were of the domestic type and 30 per cent represented sales to commercial establishments. Sales amounted to about \$2,000,000. The annual current consumption from these units is estimated at 4,500,000 K. W. H.

Sales by the properties for 1928 were as follows:

Citizens Light & Power Co.	89
Bristol Gas & Electric Co.	151
Danbury & Bethel Gas & Electric Co.	141
Durham Public Service Co.	201
Empire District Electric Co., Joplin, Mo.	317
City Light & Traction Co., Sedalia, Mo.	26
St. Joseph Railway, Light, Heat & Power Co.	224
Toledo Edison Co.	2,213
Toledo Edison Co., Defiance Div.	79
Toledo Edison Co., Lake Shore Div.	72
Ohio Public Service Co.	1,627
Public Service Co. of Colorado	1,280
Total	6,438

Active and intensive sales of electric refrigerators were undertaken by these companies during the latter part of 1925 and for the years 1926, 1927 and 1928 these sales have totaled 17,000 units. Consolidating these sales with those by dealers approximately 20,000 units are being served by the electric subsidiaries of the Cities Service Co. These units have a merchandise sales value of about \$6,000,000 and an annual current consumption of approximately 14,000,000 kilowatt hours.

PHILADELPHIA A. S. R. E. HEARS NATIONAL HEADS

(Concluded from page 1, column 3)

members of such an organization. President Wood invited all the members of the Philadelphia section to attend the national spring meeting which will be held at State College, Pa.

H. A. Lewis, acting secretary of the organization, appointed a constitutional committee of four, who are to draw up a constitution and petition the national society for a local chapter. This committee, with Cyril Leech as chairman, is to report all progress toward effecting a definite and permanent organization at the next meeting, which will be held about the first of March.

Three papers were scheduled for the technical session, which followed the dinner, but owing to the interest in the first two papers and the lack of time, the third paper by F. R. Pierce was held over for the next meeting.

The first paper of the technical session, entitled "Valves for Compressors," was read by J. H. Voss, of New York City. He pointed out the advantages and disadvantages of the various types of valves and with the aid of slides and diagrams illustrated the different types of valve construction.

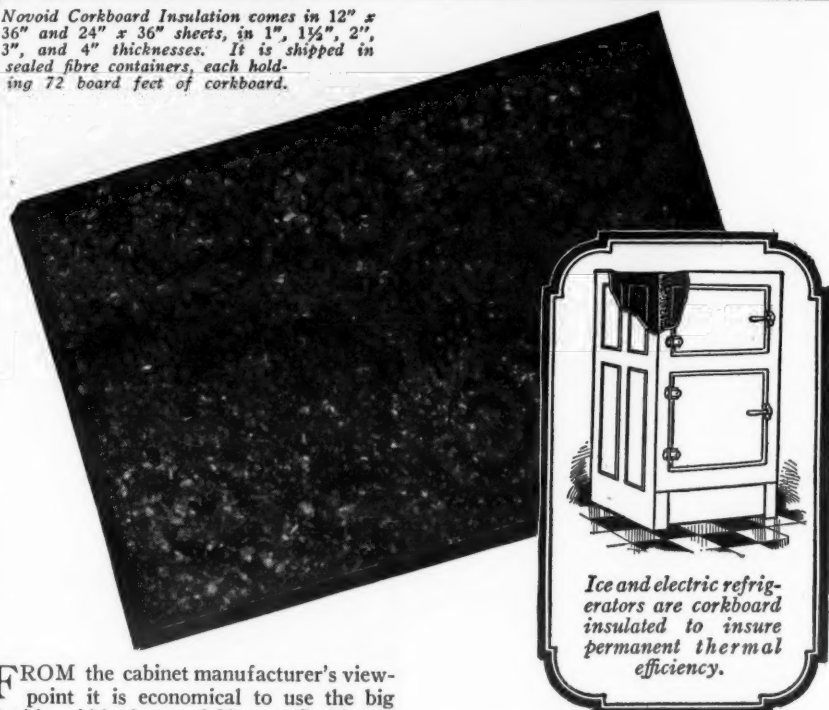
J. C. Goosman, of Waynesboro, Pa., presented the second paper on the subject of carbon dioxide, its production and use in the refrigerating industry. He gave an interesting talk on the manufacture and use of this chemical in the industry and gave a demonstration of the manufacture of dry-ice and the production of an indoor miniature snow-storm.

A. Davis Opens Refrigeration Service Shop in Dallas

The Refrigeration Service Shop has been recently opened at 5702 Lewis St., Dallas, Tex. A. Davis is manager and will do installation and service work on all makes of machines but will specialize on Servel and Electrolux.

Novoid Corkboard Insulation comes in 12" x 36" and 24" x 36" sheets, in 1", 1½", 2", 3", and 4" thicknesses. It is shipped in sealed fibre containers, each holding 72 board feet of corkboard.

? Why glue ice cubes to metal



Ice and electric refrigerators are corkboard insulated to insure permanent thermal efficiency.

FROM the cabinet manufacturer's viewpoint it is economical to use the big double width sheets of Novoid Corkboard Insulation. They are 24" x 36" in size and are available in 1", 1½", 2", 3", and 4" thicknesses. Figure the time saved in cutting and joining sheets. Added to that, they are light and easy to handle. They can be sawed and nailed like lumber. The edges of every sheet are clean and straight, they do not crumble in handling.

Novoid Corkboard Insulation resists moisture as well as the transmission of heat. Its higher insulating value makes it particularly suitable for cabinet and refrigerator construction. On request we shall be glad to send you a copy of Bulletin 280-E and a sample of Novoid Corkboard Insulation.

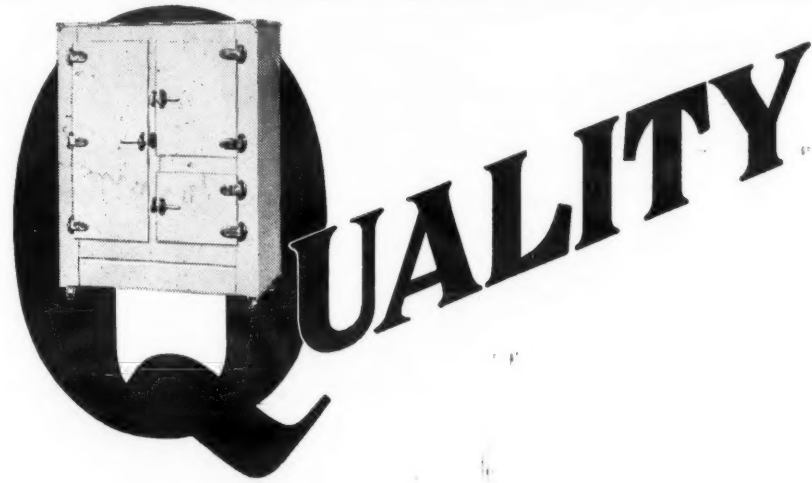
Novoid Corkboard Insulation

CORK IMPORT CORPORATION

345 W. 40TH ST. NEW YORK

"Permanent Protection for All Refrigeration"

ATLANTA BOSTON BUFFALO CHARLOTTE CHICAGO HARTFORD PHILADELPHIA ST. LOUIS TROY



In Challenge refrigerators there is first of all beauty—fittings and finish are especially commendable, but emphasis is laid in studied principles of refrigeration.

The great name of CHALLENGE has made Appearance, Durability, Temperature, Sanitation and Economy vital aids to sales. Regardless of what method of refrigeration is used Challenge meets every sales and operation need.

Challenge Refrigerator Company
Grand Haven, Michigan

CHALLENGE REFRIGERATORS

An Open Letter

To Kelvinator Distributors and Dealers

KELVINATOR pioneered electric refrigeration. Through more than fourteen years, principles of quality production and sound business policies have contributed to making the Kelvinator distributors' and dealers' franchise more valuable every year.

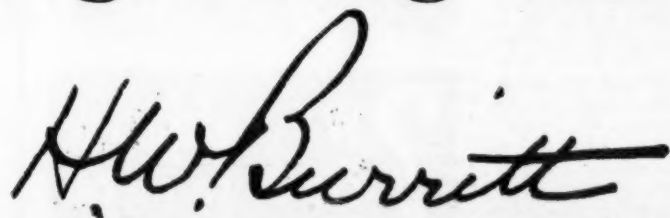
These years of steady accomplishment have given Kelvinator a distinct character as the accepted standard and have developed a constantly increasing consumer acceptance.

It is the purpose of the Kelvinator Corporation to continue to build for progress, for ever-increasing business to the Kelvinator distributor and dealer, for ever-improving service to the public.

A striking example of such progressive accomplishment will be shown to you at the Kelvinator Regional Conventions to be held throughout the country in February.

We take this opportunity to thank our dealers and friends for their faith in Kelvinator's ability consistently to pioneer progress, and for their success in building an ever-growing business.

Kelvinator Corporation
Detroit, January 30, 1929



Vice President in Charge of Sales

The Modern Market Presents Its Foods In An Electrically Refrigerated Display Case



Above—Special low temperature Thesco display counter manufactured by the C. Schmidt Co., Cincinnati, installed in the Straus Grocery Co. store in Louisville, Ky. A York unit is used to refrigerate this case. Below—Thesco display counter refrigerated by a Brunswick-Kroeschell machine in Gandy's Fish & Sea Food Market in Buffalo, N. Y.

DISCUSSES FUTURE OF SOLID CARBON DIOXIDE IN ICE CREAM INDUSTRY

That solid carbon dioxide as a refrigerant for all package goods, and all truck delivery systems of ice cream manufacturing concerns is so far ahead of ice and salt that we have no real comparison, is the opinion expressed by E. J. Lockwood, of the J. M. Horton Ice Cream Co., Peekskill, N. Y., in an article entitled, "The Future of CO₂, Gas and Solid, in the Ice Cream Industry," which appears in the current issue of the *Ice Cream Trade Journal*.

Discussing solid carbon dioxide, he matches its efficiency in cooling with that of ice and salt, by saying that three pounds of the latter are needed to compare with the cooling properties of one pound of solid CO₂. In general practice the ratio is four-fifths of a pound of ice to one-fifth of a pound of salt to obtain the proper temperatures. The four-fifths of a pound of ice will absorb about 115 B. t. u. It requires about fourteen B. t. u. to cool the ice from 32° F. to 0° F., and about three B. t. u. to cool the salt from 60° F. to 0° F., so that we have available for actual work about 100 B. t. u. per pound of mixture.

Solid CO₂ requires about 295 B. t. u. to change the solid into a gas at 0° F., so that the relative efficiency is a little less than three to one in favor of carbon dioxide.

"Ice and salt are heavy and wet and must be kept from direct contact with ice cream," he adds, "while CO₂ is a clean dry gas, easy to handle and has no moisture of any kind to destroy insulation or package, and it is not harmful if placed in direct contact with the ice cream."

After two years' study and experience with carbon dioxide in its various stages, he points out that the CO₂ machine is superior to the ammonia machine for low-temperature work. "Take the average standard ammonia machine running with a gauge of 0 to 5 pounds," he states, "which is common for hardening rooms.

Here in the compressor we have an efficiency of less than 25 per cent of the normal rating.

"Compare this with a CO₂ compressor maintaining the same temperature with a suction pressure of 280 pounds and a condenser pressure of 900 pounds, but with a displacement of only one-fifth of that of the ammonia machine to do the same work. The fact is that the compressor on the CO₂ machine requires no more power and it produces lower temperatures."

NEW CONCERN TAKES OVER G. E. SALES IN TERRE HAUTE

The A. Fromme Lumber Co., Terre Haute, Ind., distributors of General Electric refrigerators, recently sold its refrigerator department to the Hoosier Electric Refrigeration Corp. of Indianapolis, Ind., who will continue to operate the business from the retail headquarters located at 672 Ohio St.

C. H. Locke, manager of the refrigeration department has announced that he will become associated with the A. Fromme Lumber Company, but will continue in charge of the refrigeration business for the Hoosier Electric Refrigerator Corporation until the early part of February, giving the new manager sufficient time to acquaint himself with the local territory.

Frigidaire and G. E. Shown At Iowa Farm Show

Concerns exhibiting at the Iowa Farm Bureau Federations' Show held in Des Moines, Jan. 15, 16, 17, included Frigidaire Corp. and General Electric Co. Both had large booths and displayed a number of models.

? Why glue ice cubes to metal

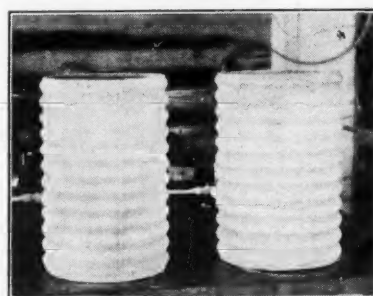
ICELECT CORP. DESIGNS NEW TYPE OF EVAPORATOR FOR COMMERCIAL JOBS

Made Up of Two Corrugated Cylinders, One Inside the Other

By Charles P. Rodman

The Icelect Corp., of Omaha, Nebr., manufacturers of the Icelect compressor, has designed and developed a new type of evaporator for commercial installations, such as ice cream cabinets, meat counters and cases; and other types of refrigerators used in grocery stores or meat markets.

This evaporator is made of two corrugated cylinders, one inside the other, and



the space between the two cylinders contains the refrigerant. This space is held down to a minimum. An evaporator, ten inches in diameter and fifteen inches long, will hold only a single pint of re-

frigerant and provides about 1,000 inches of active cooling area.

The exposed surface of the evaporator is in direct contact with the refrigerant. In commercial installations it is planned that the evaporator shall set in a vertical position, which permits the air to pass on both the outside and inside of the cylinder walls, thus giving more cooling surface as compared with the size of the cooling unit. When installed the cylinders are hung so that both ends are free.

In ice cream cabinets the coil can be arranged so that the ice cream containers would set inside the cylinder, which would bring it in close contact with the evaporator. In meat coolers, the evaporators can be banked together with a common header in any quantity desired, until the proper capacity is reached. For meat cases the units can be placed in the bunker singly, or banked together.

"The principal features of this newly designed evaporator," Albert E. Schneider, president of the Icelect Corp., said, "are large cooling surface, ruggedness of construction, ease of appliance and the small quantity of refrigerant necessary to operate it. An evaporator, ten inches in diameter and fifteen inches long, has a capacity of approximately 175 pounds ice melting capacity. This coil may be used on either the flood or dry system."

"A series of evaporators can be used to handle any commercial job up to 450 pounds ice melting capacity of any ordinary twenty-four-hour case. This can be done by connecting five of the cylinders on a common head and using only one compressor. At present the Icelect Corp. is preparing to put out a compressor of 1½ h.p. which will handle most any commercial job in the ordinary run of business."

Forged for Strength!

Commonwealth refrigeration fittings are made exclusively from brass forgings and brass rod. The extremely compact grain structure and great tensile strength thus obtained, together with accurately machined threads and seats, insure a tight, seep-proof joint for the life of the installation.

Eighteen years of experience, unusual plant facilities, and a reputation for products of more than usual accuracy—these are Commonwealth's qualifications!

Inquiries Will Receive Prompt Attention

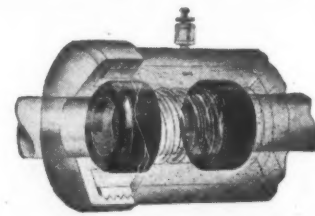
Commonwealth Brass Corporation

5781-5835 Commonwealth Ave.

Detroit

COMMONWEALTH BRASS FITTINGS

This Ring Will Banish Your Stuffing Box Problems



So simple . . . so efficient . . . so necessary is the Cooke Seal Ring that in a short space of time nearly a quarter million have been sold . . . with universal satisfaction.

This ring maintains a leakless pressure or vacuum on a wide range of fluids, gases and air. It reduces friction 90%. It reduces motor load and does away with wear on the shaft, scoring and hot boxes.

This amazingly simple mechanical device absolutely prevents leaks around a rotating shaft because it is bound leak-proof and frictionally tight on the shaft and rotates with it instead of pressing against it. Thus a ground joint is formed against the gland having only 1/8" of bearing surface.

The Cooke Seal Ring is simple in construction. Nothing can go wrong, and there are a thousand places in industry where it can, or is now being successfully used.

Machinery Makers:

Ask us to show you how Cooke Seal Rings can improve the efficiency of your product.

Machinery Users:

Your local supply house will sell you Cooke Seal Rings to install in your present stuffing boxes. Or write us direct.

COOKE SEAL RING

Dept. J, 20 North Green Street

Chicago, Illinois

MEET US and see the Cooke Seal Ring in actual operation on a Domestic Ammonia Refrigerating Machine at the Midwinter Engineering and Power Exposition, February 12-16, at the Coliseum, Exhibit No. 193.

NEW REFRIGERATOR BANISHES PROFIT-ROBBING SERVICE AFTER INSTALLATION

APARTMENTS BY SCORES CHOOSE ELECTROLUX

BUILDERS ENTHUSIASTIC

Field Offers Rich Market To
Live-Wire Dealers . . . 381
Units Sold in One Order

Wherever the finest new apartments are going up, Electrolux is going in. Nowhere is its modern appeal and popularity more evident than in this high class building field. Electrolux dealers can point with pride to scores of modern new apartments, located in New York, Washington, Forest Hills, Chicago, Philadelphia, and other cities where Electrolux has been installed.

Builders have sensed immediately the renting appeal of "no noise—no moving parts—low operating cost." Their judgment has been borne out by results. In the office of Servel Sales, Inc., are numerous letters from builders, telling of easy renting and tenant satisfaction in apartments Electrolux equipped. Many of these letters state that the builder will insist on Electrolux installations in new apartments he is going to build.

Architects have joined builders in enthusiastic praise of the Electrolux. They appreciate its simplicity, its freedom from noise, its long, trouble-free life.

New apartment buildings open a tremendous field to the wide-awake Electrolux dealer. Instead of one unit, he can sell scores, and often hundreds. One dealer sold 381 Electroluxes at one clip, to the Chatwick Apartments, Forest Hills, New York. Sales of 50 to 100 units to apartments are being made every day.

LIKE TO SELL 147 REFRIGERATORS in one order? That's the number of Electrolux units in new Tuscan Apartments, 120 East 39th Street, New York City, shown at top. New apartment at 106th Street and Broadway shown below has 120. Record one building sale is 381.



HAS NO MOVING PARTS TO CAUSE TROUBLE

Chilling Unit in One Welded Piece, Hermetically Sealed at
Factory . . . Tiny Gas Flame is "Works" . . . Maintains
Steady Cold with Absolute Silence

"Goodbye, service, hello, profit," say hundreds of refrigerator dealers who have taken on Electrolux. It's easy enough to understand why. Once a dealer sells an Electrolux and installs it, his part of the transaction is over.

Mrs. Smith or Mrs. Jones won't be calling up to say that something has happened to the refrigerator and it won't work. There won't be any requests to make the Electrolux less noisy.

Parts Don't Move

For Electrolux has no moving parts. Think what that means for just a minute. Utter noiselessness, for one thing. Clicking, whirring and rumbling are out. There is nothing to click or whir or rumble. That's a big point in making a sale. No moving parts mean no wear, another reason for the absence of Electrolux service troubles. Another strong sales argument. Moving parts will wear out. They need frequent oiling and care. A system of non-corrosive liquid, sealed in one piece, as in the Electrolux, won't.

No Adjustments

The Electrolux unit never needs adjustment or service. It consists of a hermetically sealed system of chambers and tubes. It is, of course, automatically controlled, and may be regulated to suit individual conditions. Regulation of these automatic controls and occasional cleaning of the gas burner are the only requirements even remotely resembling service.

No Kicks On Gas Bills

Electrolux has an extremely low operating cost. It's a point that has made a big hit with Electrolux users, and Electrolux dealers, too. It eliminates complaints to dealers of high operating charges. It is a potent sales argument to prospective buyers.

A tiny gas flame . . . a thin trickle of water is all the Electrolux uses. And gas and water are proverbially inexpensive the country over. Your customers will never kick at the few cents a day Electrolux costs to operate.

BIG EXPANSION SLATED IN 1929

Every Dealer To Profit . . . Ask
For Valuable Franchise
Details In Your
Territory

"Loaded for bear." That describes the Electrolux campaign for 1929. You've probably already read the story of the big national magazine advertising over in column one on this page. But, important as that is, it's only one part of the generous dealer aid for 1929.

Distributors and dealers will be liberally supported in local newspaper campaigns to an even greater extent than in 1928. Where the individual dealer wishes to go in on a local co-operative campaign and is lined up to take advantage of it, Servel Sales, Inc., are ready to stand a good share of the local advertising expense. Plenty of window and display cards, in bright, striking colors, are ready for window and store. These are real attention-getters, and should do much to turn sidewalk-gazers into store lookers.

Generous quantities of catalog folders, envelope stuffers, and other sales material have been prepared. Liberal quantities of these will be assigned to each dealer, and imprinted with his name.

Write or wire Servel Sales, Inc., Evansville, Indiana, for full information today about the Electrolux 1929 set-up in your territory. Get ready to share in the increased profits of the Electrolux 1929 expansion program.



MOST UNUSUAL REFRIGERATOR ADVERTISEMENTS FOR 1929 built around dramatic idea of heat that freezes. Saturday Evening Post and Good Housekeeping are used in magazine campaign. If you were a housewife, would you read these pages? Ask us another.

MAGAZINE ADS GO TO 4,500,000 HOMES A MONTH

COLOR PAGES AND DOUBLES

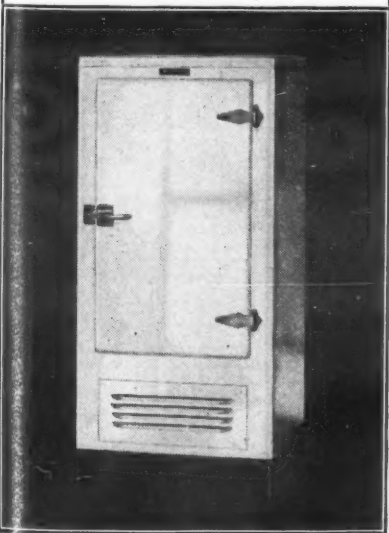
Astonishing Story of Heat That
Freezes Arouses Great
Popular Interest

Every month in 1929 you'll find Electrolux pages or double pages in color in the Saturday Evening Post. Pick up any copy of Good Housekeeping and you'll see an Electrolux color page.

This powerful team of magazines carries Electrolux advertising into 4,500,000 homes every month. Every Electrolux dealer should feel the effect of this consistent advertising drive—far and away the largest in Electrolux history. Hundreds of prospective users are reached in every dealer's territory. They are told the most startling dramatic story in automatic refrigeration—heat that freezes.

That's front page news for any newspaper. And Electrolux advertisements play up every bit of news value in that astounding statement. Every page features the tiny gas flame that is the whole "works" in the Electrolux. Clearly and forcefully, the copy tells the fact story of no noise, no moving parts, no wear, and constant temperature.

POPULAR KITCHENETTE MODEL



SPACE-SAVER for modern small kitchen or apartment is this widely sold Kitchenette Electrolux. Line has seven models, selling for \$225 to \$510, f. o. b., Evansville, Indiana.

Freeze with Heat? Absolutely, and here's how

Freezing with heat may sound queer, but that's what Electrolux actually does.

In accomplishing this, Electrolux uses no machinery. There's not a single moving part. The whole action is a simple physical change.

When the gas flame is lighted, the heat expands a refrigerating liquid to vapor. A trickle of cooling water in the condenser changes it to liquid again.

During this cycle of physical change, intense, even cold is produced. This cold freezes ice cubes and keeps the interior of the Electrolux at refrigerating temperature.

The complete Electrolux Chilling Unit is hermetically sealed in one piece at the factory. The refrigerating liquid enclosed in it never has to be renewed.

NEWEST BABY SURE IS WHALE

Chateau . . . A Handsome
Child But The Way He
Stows Away Food Is
Simply Alarming

There's a new boy in the Electrolux family, and he's a whopper. He's been fingerprinted as EL 10A, but his Christian name is Chateau. Chateau weighed well over a quarter of a ton on delivery, which certainly puts all former tales of bouncing infant prodigies in the shade. Perhaps his being the seventh son in the family has something to do with it.

Like all of his previous brothers, he's a handsome, gleaming white, but also comes in Crystal Green or Silver Gray, if preferred. What's causing the most concern now is his appetite. When his distressed parents were last consulted, his food capacity was 10 cubic feet.

Here are a few facts about Chateau: Ice Cube Capacity, 70 cubes, or seven pounds; food capacity, 10 cubic feet; external dimensions, 65½ inches high, 36½ inches wide, 25½ inches deep; internal dimensions (without allowing for chilling unit) 49½ inches high, 20½ inches wide, 17 inches deep.

ELECTROLUX

THE GAS REFRIGERATOR

MADE BY SERVEL

ELECTRIC REFRIGERATION NEWS

The Business Newspaper of the Refrigeration Industry

PUBLISHED EVERY TWO WEEKS BY

BUSINESS NEWS PUBLISHING CO.

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JANUARY 30, 1929

Executive Responsibility

IN an industry which has undergone such a quick growth and rapid expansion as that which marks electric refrigeration, it is reasonable to expect that many mistakes will be made. Thousands of apprentices have joined the ranks. A great many have found themselves in a battle for public favor with scarcely enough time to get their feet on the ground and figure out what it is all about. After wasting their energy in petty fights among themselves, it is little wonder that some have lost sight of the real objective—to sell the public.

Consider the service which modern refrigeration offers for the protection of food all the way from its source to the point of consumption. Picture the market—the millions of farms, commercial establishments and homes which need this service. Think of the years consumed in mechanical development and the millions of dollars expended to awaken the public desire. Reflect on the fact that a million users of electric refrigerators point with pride to their possession, sing its praises to their neighbors and assert that they will never do without it.

Now behold a salesman (!) clipping an advertisement from his trade paper—an advertisement of a simple tool for service men. What is the meaning of this unusual diligence? Is he studying the technical phases of refrigeration to improve his understanding of the subject and fit himself for larger responsibilities?

No, dear reader, he hasn't the slightest idea what makes a refrigerator work and probably never will have. He is going to show the clipping to a prospect. The prospect would like to have an electric refrigerator because it would be a great convenience to her, a protection to the health of her family, a joy to behold in her bright newly-painted kitchen. Why does the salesman want her to see the picture? Because it will make her afraid to buy the product of his competitor. Why will she be afraid? Because the advertisement shows a gas mask. It will remind her of the war. Will she buy the salesman's refrigerator? SHE WILL NOT.

It seems incredible that anyone hoping to succeed can be so blind to his own interests as to spend his time creating fear and distrust in the mind of the prospect—that he should imagine that such a process will make it easier for him to sell his own product. Yet, according to a reader whose letter appears in an adjoining column, this sort of practice is all too common at the present time. The surprising thing is not that young, untrained salesmen make the mistake but that executives permit the practice to continue after its obviously disastrous effects in previous years. The remarkable part is that the popularity of electric refrigeration continues to grow in spite of such adverse influences.

Back in 1926 a committee of advertising men representing a number of leading manufacturers gave serious thought to the broad problem of selling the idea of electric refrigeration to the public. It was unanimously agreed, after a review of experience in electric refrigeration and many other fields, that any attempt to build public confidence by attacking competitive products invariably defeats its own purpose. The agreement on constructive policies for advertising by members of that group stands out as one of the greatest contributions ever made to the electric refrigeration industry. Changes in personnel will account for some defections from the principles established at that time but the influence on the advertising copy remains to this day.

One of the great advantages of educational effort through the printed word is that it is subject to control. The manufacturer must face a responsibility for statements made in his advertising. He cannot deny that which appears in print over his own name. The spoken word of the salesman is far more difficult to control. Executives are conscious of this fact and are prone to evade responsibility for the unwise or unfair acts of their own salesmen.

It cannot be denied that the members of a business organization take their cue from their superior officers. The tone of their activities echoes that of the management. If executives are unfriendly and antagonistic toward each other we may expect the youngest commission salesman to reflect that attitude toward competitive salesmen.

Electric Refrigeration News is more than willing to do its part in promoting goodwill and understanding in the industry but the real answer to the problem must come from a comparatively small number of responsible executives who can, almost overnight, correct this evil if they really desire to do so.

Mooring Of Kelvinator Dirigible Marks Contest's End



The Kelvinator sales organization of the Public Service Gas & Electric Co., of New Jersey, used this dirigible at a monthly meeting at Newark. The dirigible was brought into port and prizes

were paid to prize winners. The twenty-six offices of the organization were represented by pictures of merchandising assistants pasted at the windows of the dirigible. In the front row center, are

R. R. Young and Frank Pemberton of the Public Service, and Messrs. Dorsett, Crabtree, Underhill, and Johnson of Kelvinator Corp. The Camden office was awarded first prize of \$100.

SALESMAN PLEADS FOR COMPETITION ON A CLEAN BASIS

Points to Unfair Use of Certain Advertisements

January 23, 1929.

Electric Refrigeration News,
Detroit, Mich.

What I am about to say will probably be stepping on the toes of many in the industry; yet, five years' experience in the business, and the subsequent knowledge acquired, pertaining to the questionable competitive policies pursued by salesmen representing every manufacturer in the industry, make their weight felt in causing me to state the following. Nevertheless, those whose wrath is incurred must, in all fairness, grant the truth of the statements and the soundness of the policy proposed.

I have direct reference, in general, to a past and present policy that condones the selling of one's own equipment over the merits of a competitor's, rather than diligently driving home the merits of one's own product. Just as unethical tactics beget unethical tactics, so shall fair and considerate tactics beget fairness and consideration, and vice versa.

The electric refrigeration industry has made phenomenal strides in the past five years; expansion that no other industry has ever known. It was inevitable that mistakes would be made, and that some companies would not keep abreast of the pace that had been set.

Out of the ashes of these errors and failures, fortunately, have been snatched truths that have reduced, if not eliminated, disastrous repetition.

Yet, say what you will, a measure of harm had been done; a shade of doubt had cast its shadow on the mind of the layman and semi-layman. The doubt has been and will be fostered and aggravated by a continuance of the policy of casting aspersions and detrimental innuendos—not even troubled, in most cases, to be veiled—on the equipment of others.

If the industry is to flourish, immediate co-operative steps should be taken to put personal competition on a higher plane. You will notice I have underlined the word "personal." The reason is not that there is a lack of co-operation between the manufacturers, but that the harm is done, or the ethics lacking, in the prospect's home or office or store.

So much I have reference to in general.

I have specific reference and objection to a policy that permits of salesmen clipping news-items and advertisements from newspapers, business-papers and industry-organs, with the purpose in view of using them against competitors, after building an imaginative story around them that will pave the way for phrases as, "a violent and destructive gas," "a suffocating gas that produces strangulation," or "highly inflammable and explosive," "a fire menace," "a very dangerous refrigerator."

I know of the hurt being done, and the sale lost, in many cases, when two salesmen enlarged on and magnified the demerits of each other's refrigerator. All that the salesmen really did was to vindicate the slogan of the ice-industry, "Sure, Silent and Safe," and the prospect believed them and used ice. How much better if the salesmen in each instance had even resorted to the commonplace, and tossed a coin to determine the winner without speaking of refrigerators. At the worst in each case one man would have made a sale and some money. The prospect was sold on electric refrigeration at the start, and all he wished to learn was the merits of each machine, so that he could determine the better. The salesmen told him the demerits and faults of each and that each was worse than the other. They were selling refrigeration machinery, but they sold ice.

The solution lies not in tossing the coin, but in bringing about a better mutual understanding between the sales-

people. Just how this is to be done is for others to determine, but I am convinced that it can be accomplished.

In the foregoing I mentioned the clipping of 'ads' for questionable purposes. To be even more specific I shall tell of one recent 'ad' in an organ of the industry and how it is being used. It happens to be only one of many that I have in mind, but it will suffice to illustrate my point.

An advertisement appeared showing a photo of a man wearing a gas mask, with wording to the effect of, "Protect your service men from (the refrigerant) with (the make) respirators—small, light, convenient, safe!" Quite a strong ad, to say the least! It might be relevant here for me to state that I have been and am selling methyl chloride machines, and that as this ad did not pertain to methyl chloride I cannot be classified as a crank. Is it necessary for me to state that I know of persons who have clipped this ad solely

ESTIMATES 468,000 UNITS SOLD IN 1928

Present Saturation Given as About 6.4 Per Cent.

Sales of domestic refrigerators increased from 365,000 in 1927 to 468,000 in 1928 according to figures compiled by *Electrical Merchandising*. The value of sales in 1927 amounted to \$82,125,000 and in 1928, \$128,700,000. These figures were obtained from sales records of associations and manufacturers and from estimates made by association executives and leading manufacturers. Of the 19,012,664 wired homes there are 93.6% or, approximately 17,777,000 without refrigeration and 6.4%, or, approximately 1,233,000 owning electric refrigerators.

to use it against the refrigerator? The answer is "no," and therein is the very rub. Such procedure is almost taken for granted. And what stories will be woven around that ad. "Yes, madam, if you wish to buy a machine containing that refrigerant it would be best to have a gas mask handy for each member of the family." And the sad part of it all is that the salesman is almost forced to use such tactics because of similar ones pursued by his competitor. Perhaps others will seek reprisals by exhibiting to prospects 'ads' showing some new fire extinguisher to be used in some imaginative fires caused by another refrigerator. And so on without end.

Yet, in reality, the hazard from either an irritant or an inflammable refrigerant is so small and far-fetched that it should be considered negligible and beyond mention.

I have not exaggerated one whit, I have merely been truthful and specific about some facts that heretofore have been evaded.

How much better if that ad were toned down a little, and the same for hundreds of others like it. As it was, it placed a weapon in the hands of competitors of those to whom it was addressed, and possibly, because of so doing, defeated its own purpose.

Perhaps part of the remedy lies in a rigid censorship by the publications that, though unbiased, act as unwitting mediums by placing in the hands of those persons such articles and ads as will be distorted by them to unethical purposes.

Whatever the remedy, I am certain that the industry as a whole knows it will receive the utmost in co-operation from the Electric Refrigeration News.

J. A. FERRELL,

729 Washington St.,

Hoboken, N. J.

J. E. STARR ENDORSES WILLIAMS' STAND ON UNDERWRITERS' CODE

Says Subject Was Thrashed Out in 1898

January 22, 1929.

Electric Refrigeration News,
Detroit, Mich.

Mr. E. T. Williams has called my attention to the memorandum, written by him and appearing on page 13 of your issue of Jan. 16, 1929, in reference to the so-called "multiple system" as installed in apartment dwellings.

I am an engineer, who for the last 35 years has been engaged exclusively in the manufacture of refrigeration machines and appliances and their installation for various purposes. A large share of this work was concerned with the distribution of refrigeration to small users, similar to the use to which the so-called multiple system is proposed to be employed. As I am not a "small machine man," I have no interest in the matter beyond doing my bit to assist in formulating a correct safety code, in the interest of the public and fair to the manufacturer. This subject was thoroughly thrashed out in 1898 and as the result of the discussion at that time I had a resolution passed by the Board of Directors of a company, who were supplying refrigeration by direct handling of refrigerant to consumers, whose demand varied from refrigerating boxes of 6 to 30,000 cu. ft., mostly averaging 8 cu. ft. in places of human occupancy. This resolution provided that no direct expansion business above the first floor be taken. This resolution was not intended primarily as a beneficent measure for the public, but as a measure for the company's benefit.

It seemed a common sense precaution, and as long as there was another absolutely safe way of distributing refrigeration, the use of this method was shunned then, and so far as I know, no responsible and careful refrigerating engineer has sanctioned it in the last quarter of a century.

I enclose copy of letter sent to Mr. Williams in response to his request for comment on his memorandum. I should indeed be sorry to see any member of the A. S. R. E. code committee change his mind on a subject to which he has given his written approval.

Respectfully,

JOHN E. STARR,

Mem. A. S. M. E. and A. S. R. E.
Mem. A. S. R. E. Safety Code Committee.

The letter to Mr. Williams, which Mr. Starr refers to above, appears below:

January 17, 1929.

Mr. E. T. Williams,
c/o Servel Co., Inc.,
51 East 42nd Street,
New York City.

My dear Mr. Williams:

I am just in receipt of yours of Jan. 3d with memorandum regarding Safety Code. I endorse every word of it. I understand the written approval of every member of the committee of No. 1304 of the municipal code is on file and I cannot see how they can go back on it, nor can I see how one would want to go back on it.

I am unalterably opposed to the allowance of the so-called multiple system above the first floor and have held to this idea ever since it was first proposed some 30 years ago. I do not think the A. S. R. E. should be influenced by inexperienced engineering, tinged with commercialism. The prohibition of carrying heat by the refrigerating fluid above the first floor, except in special cases, is a wise one and comes well within the undertaking "to provide a reasonable measure of safety." As long as there is a safe method, proved by a half-century's experience, why allow a method which is admitted as some risk even by its proponents, and which those of experience know is a great risk.

Yours very truly,

JOHN E. STARR

WILSON OFFERS NEW ADDITIONS TO NAT'L REFRIGERATION CODE

Stresses Value of Discussions
Appearing in the News

FREMONT WILSON
Consulting Engineer
50 Church St., New York, N. Y.

January 24, 1929.

Editor Electric Refrigeration News,
Detroit, Michigan.

Your editorial in the January 16 issue of the ELECTRIC REFRIGERATION NEWS might be termed a "classic." It shows conclusively, to my mind the intent and purpose of your work—the conservation of the so-called new industry, electric refrigeration.

Taking you at the full measure of your language contained in the last sentence of last paragraph of the editorial, "We take the position, however, that the best interests of the industry will be served by free and open discussion and that no permanent good will come from a code which must be put through by secret diplomacy," the writer takes the liberty of enclosing some suggestions re multiple installation rules that might very well be added to the admirable code recently approved by the A. S. R. E. at their meeting in December, 1928, at the Pennsylvania Hotel in New York City.

This Code not having been released for publication, at this time of writing, January 24, may only be referred to by stating that it is very much along the lines of the Code printed in your columns on July 18, 1928, containing sections 1,000 to 1,912 inclusive. The writer, therefore suggests that his addenda could, consistently, be numbered from 2,000 to 2,009, or more. Please bear in mind that none of the writer's suggestions have at any time been presented to either the A. S. A. or the A. S. R. E. committees.

It is hoped that a free and full discussion may be had through your columns so as to prove the value of open discussions.

As your "newsy News" has from the very first had the courage of its convictions in the matter of open statements on all points of the most vital interest to the "Industry" it may well be that you can clear up to a very great extent this most vexing question at this time.

Wishing you a continuance of such able articles as appeared in your issue of the 16th inst., and that the articles of Messrs. Williams and Hellund will receive the recognition that they well deserve.

Enclosed find a full set of the A. S. R. E. Code sections, and the suggestions by the writer.

FREMONT WILSON.

Note: The additions to the Code proposed by Mr. Wilson are as follows:

SECTION 2000

INSTALLATION RULES FOR MULTIPLE SYSTEMS

2001. See Section 1500—Safety Devices where Applicable to Class D. Systems

The term "multiple refrigerating system" shall mean and include all systems in which a direct refrigerant from a common source is delivered to two or more separate cabinets each containing one or more evaporators.

2002. Pipe—Standard weight pipe must be used for refrigerant lines whose test pressure does not exceed 300-lbs. Extra heavy pipe for test pressures above 300 lbs. Seamless, hard drawn brass or copper piping may be used, if of standard weight or thickness for 300 pounds pressure and extra heavy for over 300 pounds pressure.

2003. Tubing—No tubing shall be used that is not seamless drawn and of standard pipe thickness for pressures up to 300 pounds; and extra heavy thickness for pressures above 300 pounds; except at machines and refrigerator boxes where annealed copper tubing may be used, having a minimum thickness of tube wall of .034 inches.

2004. Joints—(1) Pipe joints shall have standard pipe threads and shall be made up with materials suited to the refrigerant employed.

(2) If flanged fittings are used for pipe connections they shall be of recessed gasket type.

(3) All joints in annealed copper tubing shall be sweated except that flared joints may be used on tubing $\frac{1}{2}$ " or less in diameter and for pressures not exceeding 180 lbs. if they are left accessible.

2005. Valves and Fittings—(1) Valves shall be installed in Class "A", "B" and "C" systems at the following locations: At each service outlet in pressure and return lines, and in each riser or manifold connection at or near the compressor. These valves shall be fitted with a hand wheel or other means for immediate operation as an integral part thereof.

(2) Valves in service connections shall be located outside of refrigerator or refrigerated space and at such distance above the floor as will provide ready accessibility.

(3) Evaporators removable as a unit and containing more than 3 pounds of refrigerant, shall have valves installed in both connections to permit the removal of the evaporator with the refrigerant therein.

2006. Service Connections—(1) Not more than a single tenant shall be supplied from an outlet box on a main riser. Such outlet box shall be located within the premises of the tenant served and so arranged as to be accessible at all times.

(2) No outlet or junction box shall be permitted in any hallway, stairway or vertical shaft not cut off at each story. Elevator, dumbwaiter or shaft containing moving objects, shall not be used for outlet or junction boxes, nor for tubing or piping carrying refrigerant. (Note: No outlet or junction box shall be so located that in case of a leak of the refrigerant, exit or access to tenants' premises may be cut off or obstructed.)

(3) Every refrigerator shall be rigidly secured in place.

2007. Restricted Locations—(1) Class A, B and C Systems using Ethane, Propane, Isobutane and Butane are not permitted within the fire limits of any City.

(2) All compressors connected to any system in a three or more family dwelling, con-

taining more than twenty (20) pounds of refrigerant, must be located in a Machinery Room, having no connection with other parts of the building and shall be entered and ventilated from the outside only.

2008. Approvals and Inspections—

(1) Multiple systems—apparatus—must have the approval of the Underwriters Laboratories.

(2) No multiple system shall be placed in operation until the complete installation has been tested by the installer in the presence of the authority enforcing this code, same approved and a certificate issued for it. Said certificate shall be posted, clearly in view, at the compressor, or compressors. Tests shall include a vacuum test of the complete system with the evaporators installed, and connected to the system, evaporator valves may be closed to prevent the withdrawal of the refrigerant; under this test a vacuum of twenty inches of mercury shall be placed on the system and held for a period of twenty minutes, with no detectable drop, after the pump has been stopped.

(3) After the vacuum test, the system of piping shall be tested by application of pressure as indicated in the table below.

Refrigerant Used	Test Pressures High Side Part lbs. per sq. in.	Low Side Part lbs. per sq. in.
Carbon Dioxide	1500	750
Ammonia	300	150
Methyl Chloride	180	80
Sulphur Dioxide	135	50
Ethyl Chloride	50	25
Methylene Chloride	15	15

Note: It is suggested that test pressures be imposed by the use of carbon dioxide or nitrogen.

2009. Fees and Penalties.

These are to be made to suit the local conditions and ordinances.

MANY IMPROVEMENTS IN GROCERY REFRIGERATORS

(Concluded from page 4, column 2)

box for the sake of this one item that requires such low temperature.

But the 1929 line of grocery boxes has a decided trend to the overhead cooling compartment. This will eliminate a great deal of trouble in many ways. The temperatures throughout the refrigerator will be absolutely uniform, as cold as might be required for any kind of food preservation, and permitting additional shelf display.

This is accomplished by a small shallow compartment designed to take the new type of coil the electric refrigeration manufacturers are producing. They are but five or six inches high, six to fifteen inches wide and in various lengths to fit the bunkers of all types of cases and refrigerators of this particular design. Ammonia coils will also fit these bunkers.

It is putting the bunker back to where we had it twenty years ago. But it is a vastly better built refrigerator in every particular. A grocer cannot afford to be without modern equipment today. If he is to keep abreast of the times, he must modernize and economize.

The average upkeep and refrigeration of an out-of-date refrigerator costs as much in two or three years as an entire new equipment would cost to buy. Then there is the loss of the advertising value of a better looking display and a finer cabinet. There is a serious loss on spoilage and shrinkage.

There has been a greater advancement from 1914 to 1929 in the grocery box than any other type of commercial refrigerator. There has been a similar advance in the grocery business. Little has been said about keeping vegetables in the average grocery box. One reason is because space hardly permits much of such refrigeration and another is because it is generally overdone.

All vegetable life is still life, and represents a living, growing product of this earth. That is not so with the other articles mentioned, such as butter, milk, meat, cheese and the like.

Vegetable life requires moisture. Plenty of it. If you are up against a problem where vegetables must be kept in a refrigerator, keep in mind that the air in such is dry as a general thing. In fact many refrigerator manufacturers advertise a particularly dry refrigerator. There are times when a moist (not too humid) refrigerator would save a great deal of shrinkage of foodstuffs. Therefore, in the absence of moisture, it is very wise to sprinkle water on such vegetables as lettuce, celery and other types of moisture laden vegetables, if they are to be kept crisp and fresh.

Today, the age of electric refrigerators, when every housewife either has one or would like to possess one, she is quite able to size up the kind of refrigerator her grocer has. The writer has heard many women comment on such and such a grocer having a new refrigerator, or having the same old box he has had for years, whichever the case might be. They know, too, how food tastes coming from a modern electrically refrigerated box, many of them having such in their own home. The grocer must keep abreast of the housewife that is his main support. His refrigerated foodstuffs must be kept right and they must taste right.

It is no longer an expense to be equipped with modern refrigeration, but a very great saving. Some actual savings have proven to be sufficient to more than pay for new equipment purchased on convenient monthly payment plan. 1929 is bound to be a banner year in the grocery refrigeration branch of the industry.

? Why glue ice cubes to metal

REFRIGERATION COURSE OPENED AT WORCESTER, MASS., ON JANUARY 18

The university extension division of the Massachusetts State Department of Education started a series of sixteen meetings on refrigeration, Jan. 18, at Worcester. Prof. C. A. Read of Worcester Polytechnic Institute is instructing. Considerable attention will be given to electric refrigeration as related to industrial and commercial uses.

Courses were given recently under the same auspices in Boston and Springfield with attendance which has prompted encouraging of classes in other cities. James A. Moyer, director of the University extension service, has compiled a book for use in this connection.

TOLEDO EDISON OPENS THREE MONTHS' FRIGIDAIRE DRIVE

The new business department of the Toledo Edison Co., Toledo, Ohio, has inaugurated a three months' Frigidaire campaign, which opened on January 9 and will continue until March 31. Every employee of the company will be paid a bonus for every prospect turned in who is sold a refrigerator during the campaign.


During the Christmas 10 per cent discount sale 101 household electric refrigerators and 39 commercial units were sold. These sales amounted in value to over one-half the entire sales of the new business department during that period.

R. G. DOUGLAS WITH NORGE CORP.

R. G. Douglas has recently joined the advertising department of Norge Corp., Detroit. Mr. Douglas was formerly with Servel, Inc., Evansville, Ind.

Wayne

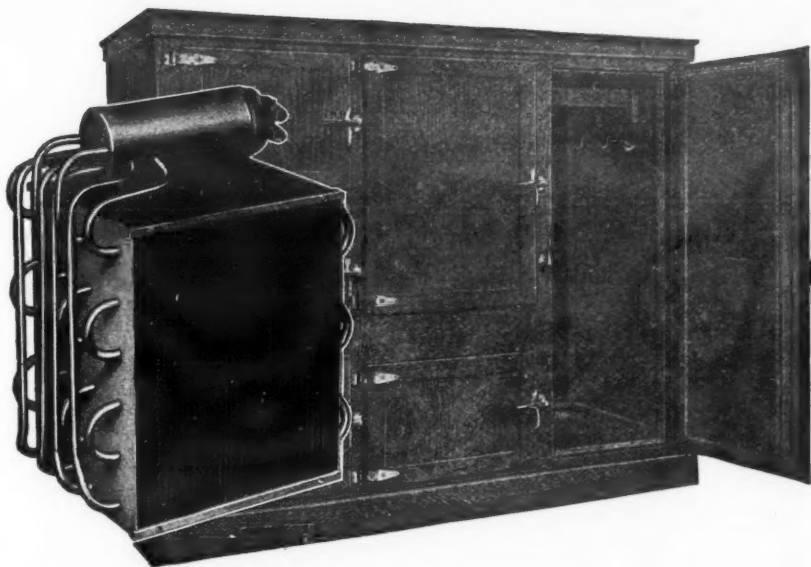
Electric Refrigerator



Up through the Electric Refrigeration Industry, in ever increasing volume, comes the Wayne.....the Electrical Refrigerator that combines faultless construction with rare beauty.

The steady growth, unusual production facilities and Wayne's outstanding performance.....make Wayne's Dealer Franchise invaluable.....and profitable! Let us tell you about our proposition on both Electric Refrigerator.....and Oil Burner.....in detail.

WAYNE HOME EQUIPMENT CO.
Main Office and Factory, Fort Wayne, Ind.



Showing one of seven Refrigerator coils available. Forty-eight models in our line—the proper coil for every standard commercial requirement. Immediate deliveries on all sizes. Catalog contains complete data and illustrations. In order to supply special requirements we have just added two additional Larkin Coils for the grocery trade.

Absolutely No Reason Why You Should Lose Sales to Grocers

THESE PROBLEMS NOW SOLVED

- ✓ De-hydration
- ✓ Defrosting
- ✓ Operating Cost

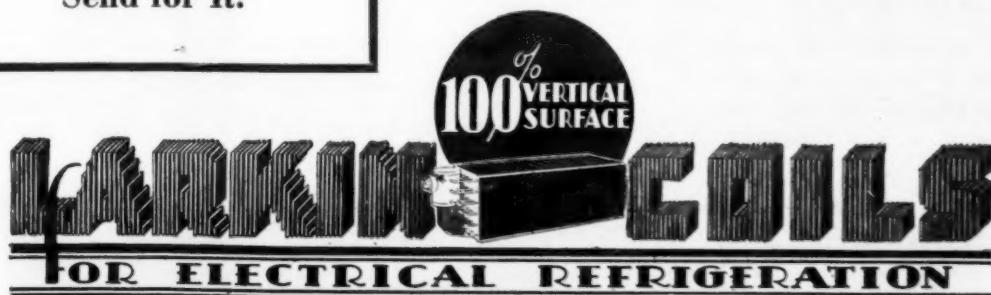
Larkin Catalog
Supplies Proof
Send for It!

MANUFACTURERS and distributors of Electric Refrigeration (commercial) have encountered some tough selling obstacles. Countless sales have been lost. Low temperatures required for Market Coolers, Display Cases and Refrigerators necessitated frequent shut downs for defrosting. De-hydration of contents (meat weight loss, etc.) was another problem. If one tried to avoid this with higher temperatures, the refrigeration was inadequate. Hence, the dilemma.

These problems—these lost sales that hurt—are absolutely things of the past. LARKIN ALUMINUM PLATE COILS adequately solve the problem and cut operating costs at the same time. These are startling statements. Our catalog contains ample proof. Your copy is ready. Send for it. Get the facts. Be able to present a puncture-proof selling program to the trade.

PIERSON-LARKIN REFRIGERATING CORPORATION

519 Fair St., S. E. - Atlanta, Georgia



Patent Applied For.

Installment Selling—Some Suggestions to the Dealer

By R. I. Petrie, New Business Manager,
Refrigeration Discount Corporation, Detroit.

THE development of the dealer's market for electric refrigeration is to a great extent dependent on his attitude toward installment selling. The aggressive dealer is leaving no stone unturned or missing any bets in his attempt to turn his prospects for electric refrigeration into actual customers.

It is safe to say that most of your prospects will admit that some day they are going to buy an electric refrigerator. This is not true of many other appliances, for various reasons. The main reason for this seems to be that were you to mention radio, washing machines, or vacuum sweepers, a very large percentage of householders are already using some make of these appliances.

Electric refrigeration, however, in the minds of a great many individuals is still a luxury that they feel they can well afford to get along without, yet it is an actual fact that there are very few of the owners of electric refrigerators but what would say that their electric refrigerator is the last thing they would part with.

You can tell your sales story to the prospect about better food, sanitation, convenience, rare desserts and the joy of entertaining, but in many cases while the prospect may agree with all you have said, the sale is not closed and it is quite

possible has been indefinitely postponed, simply because the salesman failed to stress the advisability of purchasing out of the monthly budget.

It must be remembered that competition to the electric refrigerator that you may be selling is not only other makes of refrigerators but is to a greater extent represented by all the other things that the average citizen spends his money for.

Strongest Competition Comes From Other Appliances

Your strongest competition is certainly not your competitive electrical refrigeration dealer. It might be an automobile or radio or washing machine salesman. Deep down in your heart you know that your prospect will never regret the purchase of electric refrigeration, but sooner or later after having tasted the pleasure of ownership he will thank you for your insistence that he make the purchase and even go a step farther and help you sell his friends on the idea.

The burning question is how can you make him want an electric refrigerator so badly that he will gladly sign the purchase order. If we knew ahead of time what might be the buying motive of the purchaser, we would certainly know the short cut to getting the name on the dotted line. This is the dark secret, however, and it is your job to find it out.

It is not considered good salesmanship to start off talking about price or even convenient terms. These are the very things that you as a good salesman want to keep in the background to use as your last conclusive arguments that your purchaser should buy. It may be, however, that in some cases you have overlooked the point that your purchaser can enjoy this new method of refrigeration as he is paying for it, that the price of several electric refrigerators have already been spent with nothing left to show for this expenditure, that every month a certain definite sum has to be spent for refrigeration and that for a few dollars extra each month the joys of electric refrigeration can be obtained, and that at the end of twelve months the payments stop.

As an excuse for still not signing the order your purchaser may even tell you that it is not his practice to buy anything on the installment plan, that he has always paid cash and that his education has been to do without things that he could not pay for in cash. Now! what's your answer? Without giving offense, your objective should then be to show Mr. Prospect that installment buying is considered sound practice, that because he has a standing in the community his credit is good and is something that he should avail himself of.

Ninety-Five Per Cent of All Business Is Done on Credit

You can point out that 95% of all business is done on credit, that the extension of credit on sound business lines is the thing that makes for progress, greater sales, greater production, lower prices and maybe is the very thing that provides a job for the millions of people who are producing and consuming the things that they themselves help to manufacture.

Is it not true, Mr. Prospect, that most of the things of value we possess today are ours because we obligated ourselves to secure them? We buy life insurance first, because it is a good thing to do, and then work and strive to protect our policies.

If we did not have an obligation we all know how impossible it would be to lay away monthly or yearly premium against the day that we might be in need. Human beings need an objective and having the objective attain to far greater heights than would otherwise be possible.

The question often is asked what is the minimum down payment and the maximum terms that should be offered. This is a question that cannot be answered in one sentence, because of the fact that no two circumstances are alike. The best answer is—get as large a down payment as possible and keep the terms down to the shortest possible time. In our contact with several hundred dealers we find that dealers are just like salesmen, some dealers can invariably obtain 20% down and not give longer than 12 months on the balance, and it is a striking fact in many cases, these are the dealers who produce the largest volume of sales. Other dealers seem to have to resort to smaller down payments and also longer terms, and if they were the dealers that sold the most merchandise, then we would have to admit that the reason for their success was because of their liberal terms.

Look over your sales force and you may

CHEESE SALAD IS DIFFERENT

Dissolve 1 package lemon jello in 1 cup boiling water and chill
Add 1 green pepper put through food chopper
2 packages pimento cheese
1 cup chopped almonds
1 cup mayonnaise or boiled dressing
1 cup cream, whipped
Place in refrigerator for 3 hours.

find that the best salesman is bringing in the best type of orders as well as the greatest volume.

Work for Shorter Terms and Larger Payments

We firmly believe that good salesmanship in closing the sale will result in cleaner sales on shorter terms, which means ultimately better satisfied customers. When your prospect asks what are the terms, a good answer is, "Mr. Prospect, we will try and make our terms suit you." It makes him feel good to think that he can close the deal on his basis. "What can you conveniently pay down? Naturally you want to make as large a down payment as possible so that the monthly payments will be smaller." In nine cases out of ten he will offer you a larger down payment than your standard terms call for. He very rarely will offer you as small an amount down as 10%. He very likely would be ashamed to do so unless you yourself suggest a small down payment.

After you have agreed on a down payment, then it is your job to suggest the kind of terms. Start off with "You can pay \$29.50 each month for nine months. Is that suitable?" and wait for the answer. If the purchaser shows signs that the payments are too high, try him with \$23.00 a month for 12 months. He may close on this basis. If not, you may then try him on 15 or 18 months, if your plan provides for them. Don't, however, offer your lowest terms first. If your first offer does not suit the prospect you then have no alternative to talk about.

Remember that the electric refrigeration business is the same as all other businesses. You have to fight for sales—profitable sales—and on terms that you consider good business. The greatest satisfaction comes to the purchaser when he has made his final payment.

Watch the Credit!

Some of the dealers, especially in smaller towns, do not seem to appreciate the value of making the proper credit investigation of the purchaser and proceed to make an installation before they have investigated the purchaser's credit. When it is too late they have found out that they were fooled by appearances and that payments are hard to collect. It is much better to have this information before the work has been started, much better to refuse credit than to accept a sale that may turn out to be unprofitable. Don't judge credit by appearance. Get the purchaser's paying record. It costs little and is worth the expense. This is particularly true of installations in butcher shops, groceries, restaurants, etc. Very often this type of purchaser is operating on too little capital and in many cases because of poor management passes out of the picture.

Your profit is not yours until the cash is in the bank and the purchaser satisfied. Undersized equipment, over-selling and poor installation and service are also to be guarded against. It is hard and often impossible to make collections if the purchaser is not entirely satisfied. On the other hand, your customer will be the greatest booster in your territory if he is thoroughly satisfied and collections will come easy as a natural result.

Success in business is measured by net profits and the future success of your business is just as important as the present.

REINDEER MEAT IS BIG FACTOR IN GROWTH OF COLD STORAGE IN EAST

In a report of cold storage companies in the United States, Col. Charles F. Mell, head of the Cold Storage division of the Bush Terminal Co., Brooklyn, N. Y., says, in *Ice and Refrigeration*: "The past year has brought some interesting developments. Reindeer meat has been in storage here in large quantities. A greatly increased demand for the meat, moreover, has developed rapidly, making the prospect of more demand for storage space for it during the coming year look good. The plan of sending the meat down from Alaska cut up into quarters, loins and chops, instead of as whole carcasses, has met with much favor and means that hotels and markets are demanding it in ever-larger quantities."

Another interesting report given by the same company was, "We have had 11,000,000 pounds of dates for the Hills Brothers Co. brought into Bush Terminal from the neighborhood of the Garden of Eden."

Of general conditions Col. Mell said: "This year was marked by a general increase in the demand for cold storage space in Brooklyn. We have had strawberries, blackberries, raspberries, huckleberries, and currants, frozen in their own juice after the process developed at Bush Terminal nine years ago, which has since become the general practice."

"Rabbit meat from New Zealand and a new kind of orange juice are expected to occupy increased cold storage space in this city during the coming year. Already rabbit meat has been growing in popularity in California. During the next few years we expect it will be introduced in the East, and thus provide one more commodity to boom cold storage."

"Demand for reindeer meat in the East cannot now be satisfied with the meat that the Lomen Brothers have been shipping down. Hence during the coming year, it is a safe prediction that much additional cold storage space will be occupied by this meat. New Zealand beef, expected in larger quantities during the coming year, is another one of the many causes for optimism for 1929."

ONE COMPRESSOR SERVES 129 REFRIGERATORS IN CALIFORNIA APARTMENT

A multiple refrigeration system in which 129 refrigerators are served by one compressor has recently been completed by the American Ice Machine Co. in the 15-story Villa Riviera Apartments at Long Beach, California.

This installation is said to possess many novel safety features. One feature is that, despite the extreme height of this building and the location of the compressor in the basement, operating pressures are maintained below 70 lbs.

With the exception of the risers all lines are installed as for ammonia service to insure a wide margin of safety.

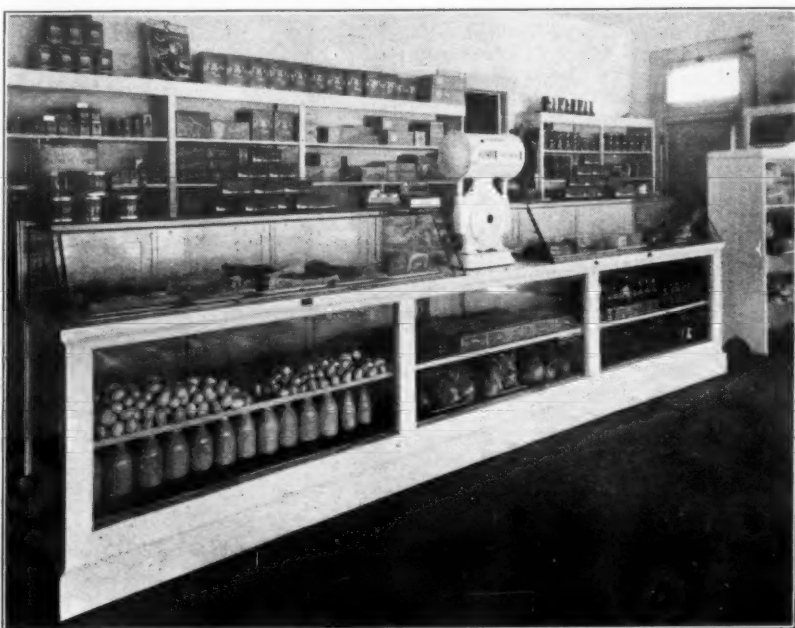
For emergency use a discharge is installed, the valve to which is accessible only to the fire department.

The cooling units are of a one-piece cast design, having three freezing trays. Tests are reported to have shown that cooling unit temperatures throughout the building vary approximately 2 degrees F.

L. C. MacGlashan Joins Frigidaire

L. C. MacGlashan has joined the direct-mail advertising staff of the Frigidaire Corp., Dayton, Ohio. Mr. MacGlashan was formerly assistant manager of advertising and sales promotion of Copeland Products, Inc., Detroit.

California Grocery Uses Fresno Case



A display case manufactured by the Fresno Showcase and Fixture Co. is used in the grocery store owned and managed by A. Hoefs, Fresno, Calif. The case is refrigerated in both top and bottom sections. Two thicknesses of plate glass are used in the top section.

FLINTLOCK CONDENSERS

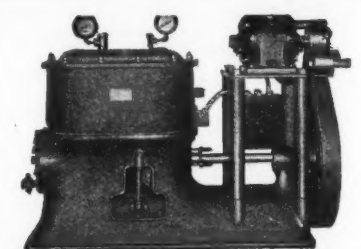
Efficient — Economical
Compact

Greater Efficiency
at Less Cost

WRITE FOR OUR BOOKLET

FLINTLOCK CORPORATION

4461 W. Jefferson Ave.
DETROIT, - - MICH.



ELECTRIC REFRIGERATION DISTRIBUTORS and DEALERS

You need the PEERLESS line of commercial units.

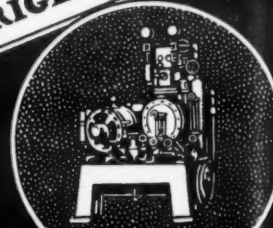
PEERLESS units give you a COMPLETE line, ranging from 1 to 10 tons.

Sixteen years of successful manufacturing and merchandising of ice machines are behind the PEERLESS name. Our record warrants your most exacting investigation.

Write or Wire

PEERLESS ICE MACHINE CO.
515 W. 35th St.
CHICAGO, ILL.

BRUNSWICK-KROESCHELL REFRIGERATION



32 years of continuous and successful application

Capacities: 500 lbs. refrigerating effect and up, covering the entire field of applied refrigeration.
Refrigerants: Ammonia; Carbon Dioxide; Methyl Chloride.

BRUNSWICK-KROESCHELL COMPANY
Refrigerating & Ice Making Machinery
NEW BRUNSWICK, N.J. - CHICAGO, ILL.



C P Refrigeration

Self-Contained Units from 500 pounds to 4 tons ice melting capacity. Ammonia or methyl chloride refrigerant.

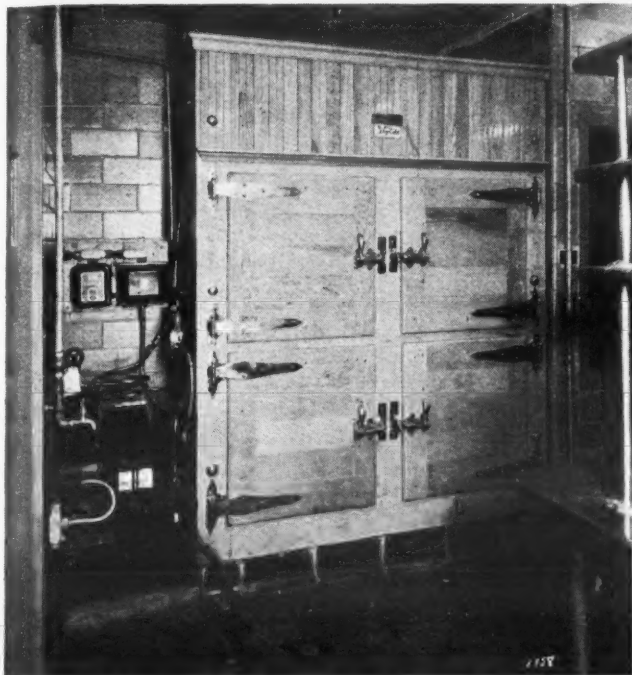
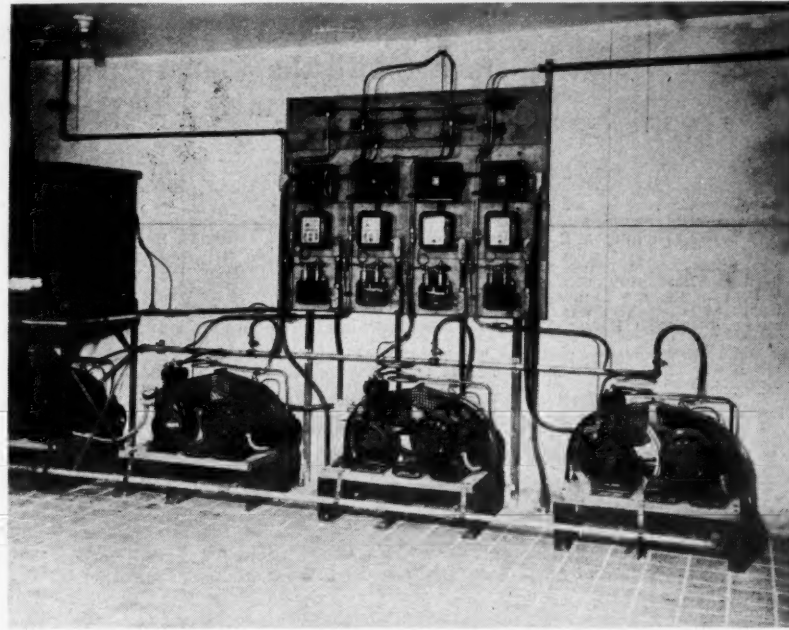
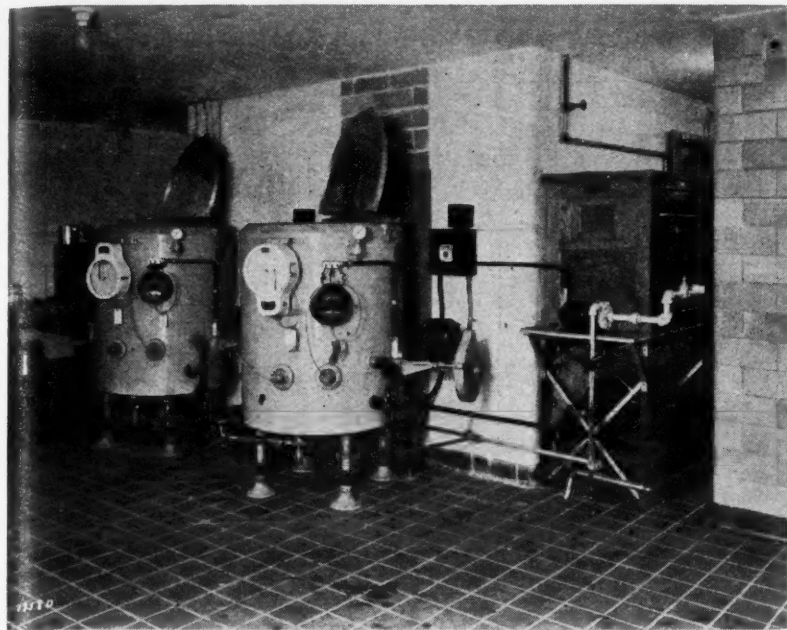
Over 30 years in the refrigerating machine business.

We invite the live wire dealer who seeks to build a permanent business to get in touch with us.

THE CREAMERY PACKAGE MFG. COMPANY

1243 West Washington Blvd. Chicago, Ill.

Philadelphia Skyscraper Hospital Utilizes Kelvinator In Varied Cooling Needs



The Hahnemann Hospital, second largest private hospital in the United States, was opened in Philadelphia, Jan. 3. The hospital accommodates 725 patients, including 185 private rooms.

This institution is completely Kelvinator equipped. The installation consists of a total of eleven WB Kelvinator condensing units. Ten of these are continually in use, while the eleventh is used as an emergency unit.

In the center above is shown the \$2,500,000 twenty-story building. In the left upper corner is shown the milk cooling equipment

consisting of two Pfaudler milk coolers each having a capacity of 200 gallons, a WB Kelvinator condensing unit and circulating brine tank. Recording thermometers are shown on the side of the coolers. Two pumps are used to circulate brine and each cooler is equipped with agitator for circulating the milk. Forty-four tube evaporators are used in the brine tanks shown on the extreme right.

To the upper right hand are shown four WB Kelvinator condensing units. The unit on the right is the emergency unit. The

two center units are used for meat, poultry, butter and eggs, and vegetable boxes. The milk cooling unit is shown on the left.

In the lower left hand corner is shown a condensing unit attached to a Hill Dry Cold box located in the small diet kitchen. In the center is shown a view of the main kitchen showing the two machines used to refrigerate the private patients' boxes. The boxes are seen on the right in the picture.

Four WB condensing units used for cooling the general storage boxes are shown at the extreme right.

Research Says Temperature for Milk Should Be 45° or Lower

A TEMPERATURE of 45 degrees or less is pointed out as the desirable temperature for retaining milk near its original wholesome state in an article in the January issue of *Ice and Refrigeration*. The article is by Anna M. Pabst, of the Bureau of Home Economics of the Department of Agriculture.

A temperature of 50 degrees F. has often been recommended for the refrigeration of milk but recent investigators stress 45 degrees. The studies as put forth in the article stress the advantage of holding milk at 45 degrees or lower because the first great jump in bacterial growth takes place between 45 degrees and 50 degrees.

Some of the data given is repeated here.

Milk, by its value as a food, is a desirable media for bacteria. One of the factors most influencing in the development of bacteria is temperature. Refrigeration is used to retard the growth of bacteria in milk and prevent the decomposition brought about by action of these organisms.

Points discussed are results of different temperatures on: raw whole milk; Pasteurized milk; raw milk held at 40 degrees and placed immediately in a refrigerator; raw whole milk held at 40 degrees, then at room temperature for 1½ hours and then placed in a refrigerator; or same milk kept in different parts of the refrigerator.

All tests were made for the purpose of determining the temperature and conditions desirable for keeping milk in household refrigerators for the length of time it is ordinarily held. The laboratory analyses have been based on reduction tests and plate cultures.

The raw whole milk which had an original bacterial content of 25,000 organisms per cc., kept at 40 degrees, showed an increase of 2.4 per cent in the first twenty-four hours and 4.8 per cent in 48 hours. With the same milk kept at 45 degrees the increase was 4.8 per cent in the first twenty-four hours and 10.0 per cent in forty-eight hours. At higher temperatures the increase during

the first twenty-four hours varies from 10.4 to 33.6 per cent. The most striking difference is in the milk kept for a longer period of ninety-six hours when the increase at 40 degrees is 24 per cent and at 60 degrees 17200 per cent.

The test reported on Pasteurized milk showed a little higher bacteria increase, aggregating a smaller count because of the smaller original count. Percentage increase for 40, 45, and 50 degrees ran 3.9, 5.7, and 17.0.

Two tests reported showed the value of the housewife getting the milk into the refrigerator immediately. Milk that had been kept at 40 degrees until the time of delivery and placed in the refrigerator immediately increased in twenty-four hours at 35, 40, 45, and 50 degrees, 1.4, 1.9, 2.4, and 4.0 per cent. The same milk allowed to stand for an hour and a half at a room temperature of 75 degrees showed an increase at the same temperatures of 2.4, 2.5, 3.4, and 10.6 per cent at 50 degrees. For forty-eight hours the increase for the first sample at the same temperatures was 2.4, 2.7, 13.8, and 25.8 per cent and for the second, 2.6, 3.2, 23.2, and 63.5 per cent.

In the count in all these tests the leap in increase is between 45 and 50 degrees, while the time and temperature combination makes a temperature below 45 degrees much more desirable when keeping the milk more than forty-eight hours.

Milk with an original count of 24,000 was kept at different places in the refrigerator to obtain the percentage increase. In the part of the box where the temperature was 51.1 degrees the increase was 71.1 per cent in twenty-four hours and 20.8 per cent in forty-eight hours. At 48.0 degrees the increase was 6.6 per cent in twenty-four hours and 14.5 in forty-eight. At 45.0 degrees the increase in twenty-four hours was 6.2 per cent and 10.0 in forty-eight hours.

According to standards drawn up by the American Public Health Association, Grade A milk should contain not more than 60,000 bacteria per cc., and certified milk not more than 10,000. No definite statement can be made concerning the

number of bacteria present at the point when milk actually becomes undesirable for food, because of the variance of the kind of bacteria and the chemical composition of each individual sample of milk.

It is now generally recognized that milk must be delivered in covered containers. Both because of the excellent medium which milk affords bacteria and its ready absorption of odors, it should be kept tightly covered in the refrigerator.

Servel Appoints M. Hoggson District Sales Manager

MacLean Hoggson has been appointed district sales manager for Servel Sales, Inc., Evansville, Ind., and will cover the territory adjacent to Philadelphia, Pa. Prior to joining Servel, he was associated with the Remington Cash Register Co.

? Why glue ice cubes to metal

Sells 11 Machines in a Town of 90 Families

Scranton Coal Mining Co., Scranton, N. D., sold eleven General Electric refrigerators last summer in Scranton, a town of about ninety families.

Seattle Wayne Distributor Moves Into Larger Quarters

Wayne Electric Refrigerator Co., Seattle, Wash., have moved into larger quarters to accommodate expanding business. The new location is 2001 Fourth ave.

SULPHUR DIOXIDE

ANALYZED
SULPHUR
DIOXIDE

Universally used in the production and servicing of refrigerating machines.

Prepared for direct charging, with absolute protection afforded by complete laboratory analysis of each cylinder, large or small.

Exceptional dryness maintained as an additional safety factor

Ten sizes of cylinders from 2 lb. to 150 lb. capacity.

ANSUL CHEMICAL COMPANY
MARINETTE, WIS.

Canadian Distributor
GRASSELLI CHEMICAL CO. Ltd.
Toronto—Montreal

Western Subsidiary
ANSUL CHEMICAL CO. of Calif.
Modesto, Calif.

KULAIR COMMERCIAL CONDENSING UNITS

For Use With Any Practical Cooling Unit

Low, Medium or High Speed
Multiple or Single Unit Hookup

Sulphur Dioxide or Methyl Chloride

A sensible policy product and price
Awaits your inquiry
Write for it

KULAIR DIVISION
FRANKLIN AIR COMPRESSOR CORPORATION
NORRISTOWN, PA.



No. 3000 Air Cooled 9942 BTU per
Smaller Sizes to ¼ Horse Power.

Koo

Salesman

Salesman

Mr. Brown, Dole Refrig. Machine Co., 1209 Washington Blvd., Chicago, Ill.
R. C. Wagoner, 62 Boston Ave., West Medford, Mass.
Brantz Electrical Store, 111 Main St., Bradford, Pa.
Norge Saginaw Co., 105 Bearinger Bldg., Saginaw, E. S. Mich.
P. E. Fletcher Co., 15 Park St., Nashua, N. H.
Homer J. Hendrix, 100 Somerset, Ohio.
J. E. Hendrix, Frig. Sales & Serv., Montgomery City, Mo.
General Refrigeration Co., 1019 Richards St., Vancouver, B. C., Can.
Walter Meyer, 121 W. Euclid St., Arlington Heights, Ill.
James E. Robinson, Crystal City, Mo.
Kane Bros., 115 Cass T., Joliet, Ill.
S. E. Sutley, 233 N. Tenth St., Newark, Ohio.
M. S. Gooderham, 1166 Bay St., Toronto, Ontario, Can.
L. J. Cropely, 1166 Bay St., Toronto, Ontario, Can.
James E. Wagoner, 1166 Bay St., Toronto, Ontario, Can.
George S. Hasbrouck & Co., 206 Washington Place, Passaic, N. J.
A. E. Wegert, Electric Refrigeration Co., 153 East Main St., Lexington, Ky.
J. E. Wilson, Weatherford, Okla.
E. P. Sales, 1203 W. 14th St., Ft. Smith, Ark.
Smith & Strelow Co., Monroe, N. Y.
Melbourne, Australia.
W. E. Price, 717 Fifth Ave., W. Williston, N. Dak.
B. J. Beil, 5314 N. 25th St., Omaha, Nebr.
Princeton Automotive Electric Co., Main and E. Marion St., Princeton, Ill.
R. S. Griefen, S. E., Div. Mgr., 163 Barksdale Dr., Atlanta, Georgia.
L. S. Combs, 7369 Ridge Blvd., Apt. A-1, Chicago, Ill.
J. H. Skaggs, 736 33rd St., Des Moines, Iowa.
W. V. Marshall, Hyde Park, N. Y.
Finke Stores, Inc., 325 DeSoto St., Alexandria, La.
Finke Stores, Inc., Elizabeth, La.
Southern Ice Machine Co., Tom Sadow, 2035 Central Ave., Memphis, Tenn.
Whitney Giffard, 1740 Yosemite, Detroit, Mich.
R. W. Doege, 7405 Dexter Blvd., Detroit, Mich.
J. H. Harty, 14169 Prevost Ave., Detroit, Mich.
H. G. Rahn, 123 14th St., Buffalo, N. Y.
H. R. Carroll, 714 12th St., Washington, D. C.
Brunelle-Bouchard Limited, 27 Rue Saint Jean, Quebec, Quebec, Can.
Polar Sales Co., Aeolian Apt. Bldg., Vicksburg, Miss.
J. F. Callaway & Co., Marlow, Okla.
W. J. Hinchshaw-Frigidaire Sales, Pawhuska, Okla.
The Domestic Electric Co.,
J. B. Rford, c/o Standard Bulk Co., Concord, N. C.
G. E. South Ice Cream Co., Box 324, Wailaha, S. C.
Sanford Electric Co., Carthage, Sanford, N. C.
W. J. Rutian, Hawarden, Iowa.
A. H. Wherry, Jr., 21624 Dealer, Chester, S. C.
The Electric Sign, 219 Fourth Ave., Havre, Mont.
Princeton Electric Co., P. O. Box 325, Waynesville, N. C.
F. A. Evylsh, P. O. Box 111, Carrizozo, New Mexico.
Jas. L. Cates, Box 138, Greenwood, Miss.
Worcester Electric Light Co., 11 Foster St., Worcester, Mass.
C. Warren Meyer, 119 Main St., St. Charles, Mo.
G. E. Madere, 1412 25th Ave., Gulfport, Miss.
B. V. White, Creal Springs, Ill.
John F. Smoyer, 206-08 Mill St., Bristol, Pa.
N. Lee Taylor, Box 283, Hattiesburg, Miss.
H. H. Harty, 224 Oak Ave., Wahpeton, N. Dak.
J. H. McMaster, Winnsboro, S. C.
S. C. McPerson, 207 E. Oklahoma Ave., Guthrie, Okla.
Chas. J. Nayle, Prospect St., Herkimer, N. Y.
Robt S. Ahrens, 189 Mari Ave., St. Paul, Minn.
Irving Martin, 192 Lexington Ave., New York, N. Y.
Manuel Angel Fernandez Y Cia, Apartado Postal 18 Bis, Av. 5 de Mayo Num. 10, Mexico, D. F.
Walker Electric Co., Rosemary, N. J.
N. Cates, 508 Court St., Eau Claire, Wis.
N. Cates, City Dairy Co., 305 Ash St., Jefferson City, Mo.
J. B. Ernsworth, 1010 W. Yakima Ave., P. O. Box 1200 Yakima, Wash.
Piedmont Electric Co., 86-88 Patton St., Asheville, N. C.
Howard & Roberts, Canton, N. Y.
J. H. Martin, 27 Sheldon Terrace, New Haven, Conn.
Keystone Refrigerating Corp., D. W. Campbell, Ass't Treas., Beaver Falls, Pa.
S-I-D-A-E, Via Mercanti, 18 Torino, Italy.
Bevans Electric Shop, Macon, Mo.
P. A. Carl, 59 Jennings Ave., Salem, Ohio.
Wm. V. Aggas, 210 Liberty Rd., Englewood, N. J.
Fred L. Shelor & Co., Inc., 144 W. Grace St., Richmond, Va.
Leo Lemire, D. D. S., 4717 St. Catherine, East, Montreal, Quebec, Can.
Wm. J. Willson, 290 Lyon St., Milwaukee, Wis.
Edward J. Arnold, 85 W. Winspear Ave., Buffalo, N. Y.
P. C. Gerwig, 172 15th St., Beaver Falls, Pa.
Oil Burner Service Co., A. A. Proctor, 321 W. Jefferson St., Rockford, Ill.
A. Jones, 912 Ward Parkway, Kansas City, Mo.
Superior Electric Refrig. Co. of Illinois, Suite 766, Builders Bldg., Chicago, Ill.
H. Allen Kinney, Refrig. Eng., Union Sandusky, Ohio.
C. F. McCarty, McCray Refrig. Sales Corp., 120 S. Seventh St., Louisville, Ky.
Carl L. Stewart, 147 N. Midler Ave., Syracuse, N. Y.
Ross Biddle, 51 Baltimore St., Dayton, Ohio.
Silica Gel Ltd., Bush House (West Wing), Aldwych, London, W. C. 2, E. Eng.
Sudd. Eisschrank-Fabrik Begr., Weidenkaff, Clemenstr. 113, Munchen 13, Germany.
Colonial Mantel & Ref. Co., 494 Dumont Ave., Brooklyn, N. Y.
H. J. Gorman, 5624 Penn Ave., Pittsburgh, E. E. Pa.
Wm. C. Mayfield, 1303 Walnut St., Wilkinsburg, Pa.
Wm. James, Jr., 3930 Brownsville Rd., Pittsburgh, Pa.
Jas. A. Conves, 3324 Beechwood Blvd., Pittsburgh, Pa.
Paul W. Dreitz, 6244 Eastwood Blvd., Pittsburgh, Pa.
H. M. Satterly, 6324 Alderson St., Pittsburgh, Pa.
H. W. Douglas, Norge Corp., 670 E. Woodbridge, Detroit, Mich.
H. W. Persbacher, 629 Madison Ave., Scranton, Pa.
Juruick Refrigeration, Inc., 30 E. 23rd St., New York, N. Y.
Springfield Refrigerator Sales Co., Inc., 406 S. Richards, Treas., 406 S. Fourth, Springfield, Ill.
D. G. Connolly, Tyler, Tex.
J. R. Atkinson, c/o Page Morris, Inc., 278 Broadway, Albany, N. Y.
C. V. Head, 59 State St., Albany, N. Y.
R. M. Grahnert, 101 American Ave., Long Beach, Calif.
Chicago Vitreous Enamel Product Co., 1407-1447 E. 65th Court, Cicero, Ill.
J. Nelson & Co., 710 S. Main St., Tulsa, Okla.
J. E. Libarona, Asistentante, 169, Mexico, D. F.
Refrigeration Refractor Works, 2326 S. Western, Chicago, Ill.
Brand & Venter, Electric Refrigeration Service, 416 Broadway St., Jacksonville, Fla.
C. H. Stull Co., 70 N. Division St., Grand Rapids, Mich.
Burge Ice Machine Co., Inc., 218-230 N. Jefferson St., Chicago, Ill.
A. Baldwin & Co., Inc. New Orleans, La.
Chester A. Brown, 333 Travers Place, Lyndhurst, N. J.
Canadian General Electric Bldg., Mr. H. S. Brown, 60 M. D. St., West, Toronto 2, Can.
Fred H. Suddarth, 3440 Montvall Ave., Kansas City, Mo.
C. Percival Co., 11th and Cherry, Des Moines, Iowa.
E. T. Babson, 20 Yale Terrace, West Orange, N. J.
O'Bannon Bros., 101 Terminal Warehouse, Little Rock, Ark.
M. L. Wingfield, 1518 Armour Blvd., Kansas City, Mo.
Borchford, 658 Ellicott Square, Buffalo, N. Y.
Welsbach Co., 1002 Tenth St., N. W., Washington, D. C.
Drysdale Engineering Co., Ltd., 1248 St. Catherine St., W. Montreal, P. Q., Can.
Emporia Bldg., P. Q., Can.
J. M. McDonough, 1462 Columbus Ave., Boston, Mass.
H. R. Van Deventer, 342 Madison Ave., New York, N. Y.
Sander Butts, 2613 Michigan Ave., Detroit, Mich.
Charles Greene Co., 122 Florida Ave., Tampa, Fla.
H. C. Stallings, 123 Fulton St., Fresno, Calif.
S. Buttine, Electric Co., 19 Grand Ave., Oakland, Calif.
Olson Mfg. Co., 54 Commercial St., Worcester, Mass.
Ahrens Supply Co., 504-506 N. Broadway, Oklahoma City, Okla.
G. V. Tulford, Box 207, Twin Falls, Idaho.
K. Norman, Frederick, Okla.
J. Sellman, Consult. Eng., Serval Inc., 51 E. 42nd St., New York City, N. Y.
Woods Copeland Inc., 242 S. 14, Lincoln, Nebr.
Illinois Appliances Co., Illinois Hotel Bldg., Bloomington, Ill.
H. H. Ryman, 104 Tenth St., Honesdale, Pa.
R. M. Wrigley, 1472 Gencoe St., Denver, Colo.
A. C. Draeger, 2066 Marengo Ave., South Pasadena, Calif.
C. L. Bilbruyar, 204 No. Horace Ave., Chicago, Ill.
James E. Westwick, 1454 Shoreside, Brooklyn, N. Y.
Michael Alta, 7901 19th Ave., Los Angeles, Calif.
J. R. Rickard, Box 729, San Angelo, Tex.
Peck & Hills Fur Co., P. O. Box 723, Chicago, Ill.
Kelvinator A. O. Bahnhofstr. 55, Zurich, Germany.
D. Miller Elec. Inc., 220 So. Greenleaf Ave., Whittier, Calif.
Metropolitan Edison Co., Topton, Pa.
Gregory V. Rose, Inc., 315 North Michigan Ave., Chicago, Ill.
H. T. Heydrick, 3141 Emerson Ave., So., Minneapolis, Minn.

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1991	1992
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Keeping Up the Prospect List Is First Essential Declares Taylor, of Copeland Factory

Salesmen Should Divide Time Systematically Among Owners, Call Backs and Prospects

By A. M. Taylor, Director of Advertising
and Sales Promotion, Copeland Products, Inc.

THE man who cannot find prospects either does not "know his stuff" or is troubled with hook-worm. When a salesman knows his product—knows what it will do—he has no trouble singling out the many lines of business to which it is a real economic necessity. He knows, of course, that it is fast becoming an absolute necessity in every worth-while home.

The man who slumps in sales is the one who does not keep his prospect list growing constantly. Before you can have customers you must have prospects. The big mistake that many men make is running all the time after four or five of their prospects, hoping to make the sale and forgetting to develop new prospects. When they have worked out the prospects they had, they have to start all over to work up a prospect list. Valuable time is lost. That's where their commission check suffers.

In the case of the man who has no owners to call on and is unfortunate enough to work for a distributor or dealer who does not maintain a direct mail list for the purpose of creating leads, there is nothing left but cold canvass. A few days' consistent effort along this line, however, will give him a list of prospects and then owners, and from that time on he need never do "cold turkey" work again.

A study of the most successful efforts in use by men who have made their mark in selling shows they follow an exact system. They realize time is the only asset they have. They try to plan their work so that they will never lose time in false motion. They plan to see a given number of persons each day—some of them owners—some call backs, and some new prospects. They plan to devote a given number of evenings each week to the same type of work. And when they have raised the number of worth-while interviews per day to what they consider a maximum, their next effort is to increase the efficiency of their calls.

In the early or pioneer days of the industry, cold canvass was almost a necessity. Today, with hundreds of thousands of owners, the cold canvass seldom is necessary. Nor is it worth while spending much time in handing out an argument to someone who has not exhibited the slightest flicker of interest in electric refrigeration. There are too many persons today who are interested. The secret of increased sales is to locate those interested persons and locate them quickly, either by the use of direct mail or by telephone.

One very successful salesman simply telephones a wide list of "suspects." He does not even mention the make of refrigerator he is selling, but asks the lady of the house if she is contemplating the purchase of refrigeration that season. If she shows no interest, he passes on. If she shows even a slight flicker of interest, he makes an engagement to call and demonstrate. This salesman works on "live" stuff.

There are two principal objections which salesmen meet. One is the statement "I do not want it." Another is "I cannot afford it." Sometimes the former answer is given by persons less frank than those who give the second, but it means practically the same thing. In either case the answer is an indication that a poor selling job has been done.



A. M. TAYLOR

If the advantages of electric refrigeration have been set forth clearly and convincingly enough, the prospect is going to want it and it beats all how fast a man who says "I cannot afford it" finds ways to dig up the first payment when he really begins to want what the salesman has to offer.

Whenever a salesman approaches a prospect a battle of minds takes place. Naturally, the prospect does not want to be sold. The salesman who quits because he does not get an immediate enthusiastic reception has not learned the first principle of selling. His attitude should be that he has a proposition very much to the prospect's interest to understand—a product very much to the prospect's interest to own. Rather than to create the impression that he is trying to sell something, he should ask an opportunity to explain his proposition and why the prospect will be interested in it. Few persons will turn down an opening overture of this nature. Self-interest is a dominant characteristic in all of us.

With an opportunity to explain, the salesman has just begun. His knowledge of human nature tells him that there are several angles of appeal. To some one of these angles the prospect is more susceptible than to others. But only by trying them out can the salesman decide which is the most effective. Certain instincts are inherent in all of us. For instance, the instinct of self-preservation. Here is where the appeal for health protection comes into play; health protection for the prospect, health protection for the prospect's loved ones.

The live electric refrigeration salesman is keenly attune to all of this. He can sense his prospect's reasoning, and sell him his product. But—to do this, he must have prospects, and he must keep on his toes all the time, or he will face the "cold canvass" drudgery again.

SALES PROMOTION, ADVERTISING TALKED AT G. E. CONFERENCE

Managers at Second Meeting Review Past Work and Plan for 1929.

ADVERTISING and sales promotion managers of the General Electric Co. held their second conference, January 21, 22, 23, in Cleveland, in the Hanna Building.

The meeting assembled Monday morning with Paul H. Dow as chairman. W. E. Underwood of Lord, Thomas and Logan spoke on "What Is Advertising?" L. R. Edwards and W. M. Hutchison talked on "Our National Magazine Program for 1929," and gave a resume of "Our Newspaper Activities."

Luncheon was followed by a discussion by L. R. Edwards and W. E. Underwood of "Successive Steps in the Preparation of One National Magazine Advertisement and Newspaper Tie-up." S. E. Heibel spoke on "How to Obtain Local Publicity." "How Electrotypes and Mats Are Made" was explained by W. M. Hutchison. F. W. Nye, president, Outdoor Advertising Agency of America, talked on "The History and Value of Outdoor Advertising," and was followed by a talk on "Our Poster Campaign," by W. A. Toker. W. M. Hutchison closed the afternoon session with a discussion of "The Mechanics of Newspaper Advertising."

A banquet was served at the Allerton Club at which Ell C. Bennett, president, Bennett-Watts-Haywood Co., Chicago, publishers of Electric Light and Power, and Electrical Dealer, spoke on "Modern Merchandising Methods."

The Tuesday morning session opened with a discussion by W. J. Daily on "The Sales Promotion Manager—His Functions and Duties." O. C. Hamilton talked on "Keeping Sales Promotion Records." A. C. Mayer spoke on "Hiring and Training Salesmen." "Literature and Its Uses" was discussed by E. H. Norling. C. E. Roesch spoke on "Selling the Consumer." A luncheon meeting was held at the Athletic Club at which F. M. Cockrell, publisher of ELECTRIC REFRIGERATION NEWS, spoke on "The Editor's Viewpoint."

W. J. Daily talked on "How to Issue the House Organ." "Windows Should Pay Their Share of the Rent" was discussed by J. T. Dickson. J. J. Donovan discussed "How the Sales Promotion Manager Can Help the Apartment House Salesman." A representative of the Universal Engraving Co. explained "How Engravings Are Made." The afternoon session closed with a discussion of "How the Printing Is Done," by a representative of Corday & Gross Co.

W. J. Daily opened the Wednesday morning session with a talk on "Finding and Reaching the Consumer." E. H. Norling spoke on "Making Novelties Pay Their Way." "Sales Promotion and the Commercial Market" was discussed by W. E. Landmesser. W. J. Daily spoke on "Building the Direct Mail Program," followed by a discussion of "The Importance of Proper Store Layout and Identification," by J. T. Dickson.

"The Architectural Exhibit" was discussed, followed by a luncheon meeting at the Cleveland Electrical League, Stalder Hotel. J. E. North, president, spoke on "The Cleveland Electrical League."

O. C. Hamilton spoke on "Conducting Local Contests," and W. M. Timmerman talked on "What the Sales Promotion Manager Should Know About the General Electric Refrigerator." H. H. Bosworth spoke on "Central Stations."

W. J. Daily closed the meeting with a discussion of "1929 Activities."

Less than two-thirds of the population of the United States live in homes which use electricity.—N. E. L. A. Bulletin.

1,100 FRIGIDAIRE SALESMEN TO GATHER IN CHICAGO FOR REGIONAL CONFERENCE, FEB. 13

A group of approximately 80 salesmen of the Frigidaire Sales Corp. branch in Minneapolis, Minn., will attend a regional meeting which will be held in Chicago on February 13. This conference will be attended by more than 1,100 Frigidaire salesmen from the Middle West and will be one of the ten similar regional meetings that will be held throughout the country.

"I am reading your paper regularly and it is a pleasure to see how it gains in leaps and bounds—heartily congratulations."—William H. Schladitz, 1004 Poplar St., West Bend, Wis.

? Why glue ice cubes to metal

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EXTRA DRY ESOTOO
MARK

SULPHUR DIOXIDE

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Wire us where we can serve you

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F. A. Eustis, Secretary 131 State St., BOSTON 2 Rector St., NEW YORK

M. & W. CO.
1876

LACQUERS ENAMELS

A Lacquer Finish that Has Stood the Test
M & W REFRIGERATOR
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A Quality Reputation on these products has been established through actual large quantity production on Cabinets widely distributed throughout the world.
Another complete M & W Finish including either Lacquer or Oil Primer followed by M & W Lacquer Enamel in White or Colors.
We invite your correspondence regarding your particular problems.

MAAS & WALDSTEIN CO.

EXECUTIVE OFFICES AND PLANT, 438 RIVERSIDE AVENUE
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AND WAREHOUSE
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Wanted—Sales Executive

\$10,000 to \$15,000 Calibre

A client of ours, an old-established, highly successful manufacturer of national prominence, seeks two men of proven ability to build and manage active selling organizations in territories now open. They must have personality and education that will attract and hold salesmen of the highest type. Their past records must show leadership qualities and a successful career. The ideal men are now probably managing the sales force for some Distributors of major household appliances and have the ambition and ability, but not enough money, to handle a distributorship of their own. They must have available sufficient capital to finance their immediate organization expenses but no investment in stock or parts will be required as it is the intention of our client to assist the proper men in their operations to this extent.

Product is an electric utility sold direct to better class homes—not a vacuum cleaner, washing machine, oil burner or electric refrigerator. It is protected by patents and supported by advertising in the Saturday Evening Post and other national magazines.

We want applications only from men who have been approaching earnings of \$10,000 a year but are seeking an opportunity to build up a permanent and profitable business of their own without the investment of large capital.

All applications will be held confidential but must be complete and detailed as regards personal particulars, age, financial resources, education and business experience.

Box No. 140, Electric Refrigeration News.

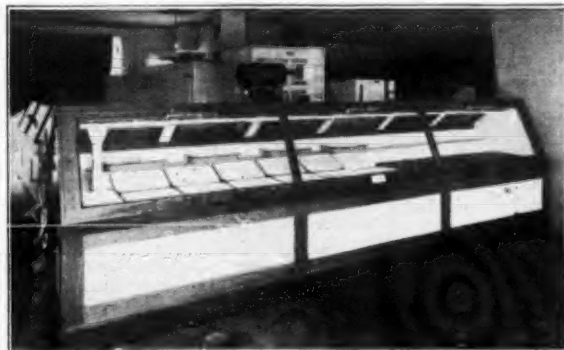
Service Heads Meet at Evansville



The Servel service convention held in Evansville, Ind., Jan. 6 to 18 drew representatives from all sections of the country. Service requirements for both Servel and Electrolux were discussed. Those in the picture are, reading from left to right (top row): R. C. Ryan; R. R. Guenther; C. L. Olin; second row: N. A. Shepley; O. L. McKinney; L. G. Cottrell; C. A. Reitz; R. K. Eskew; J. D. Dickson; W. H. Parker; bottom row: F. R. Cogburn; G. L. Roach; R. Cameron; H. M. Molyneux; C. Noakes; R. Etherton; S. R. Cooper; R. E. Montgomery and J. W. Slowe.

The evergrowing volume of sales speak well for the popularity of Electrically-Cooled Display, Storage and Meat Boxes

We build cases and boxes or install equipment for dealers
Correspondence invited with view to extending our service to other territories



MARSDEN'S STORE FIXTURE HOUSE, Inc.

ESTABLISHED 1898

30-38 James St., East Providence, Rhode Island

Electric Frosting Machine Is Used by Government to Test Cold Resistance of Field Corn

Portable Apparatus Using Servel Compressor Permits Accurate Check of Reaction of Corn Under Different Temperatures

By E. M. Lebkuecher, Illinois Power & Light Co.,
Bloomington, Ill.

ONE of the great crop hazards encountered by the farmers in the Corn Belt is frost occurring before their corn crop is fully matured. Each year in early fall, there is usually a period varying in length from a few days to two weeks or more when the night temperatures drop below 50° F. Sometimes this temperature becomes low enough to cause what is popularly described as "light frost," "heavy frost," or "killing frost." Often after these cool nights a period of warmer weather follows. This warm weather is the kind that is very advantageous for the natural ripening of corn that has been uninjured in any way. Investigations and studies have disclosed that certain strains of corn are

hoists are also connected to conveyors on tracks at the top. The framework supporting these overhead tracks is itself on rollers, which rest on tracks laid along the ground. This arrangement permits the entire outfit to be moved over the ground in either of two methods. It may



The Frosting Machine Hoisted Over Four Hills of Corn

injured or even killed by these periods of cool nights, even though no actual frost occurs. While some strains will not be killed, they become damaged to an extent that the quality of the grain is lowered due to their maturing process being retarded. The grain also does not store so well as it is more susceptible to ear rots. Thus a great amount of commercial damage to the corn crop is caused at times when the temperature falls below 40° F. for a few hours, even though there is no actual frost.

It has been found that different varieties and strains of corn vary considerably in their resistance to injury from cold. Some varieties were found to withstand temperatures as low as 28° F. for several hours without apparent injuries. During the past five years these differences were observed under natural conditions in the field at widely separated points in the Corn Belt.

From these studies and observations it naturally followed that if it is possible to develop a corn that combines cold resistance with other desirable qualities, it will have the same effect as lengthening the growing and maturing season for several days.

Experiments to this end have been conducted by Dr. J. R. Holbert of the U. S. Department of Agriculture on the E. D. Funk farm, near Bloomington, Illinois. Realizing that nature could not be controlled or relied upon to give him the desired temperatures in a proper manner for his studies and experiments, the electrical frosting machine, as shown in the above picture, was devised. Thus electric refrigeration has been put to a very strange purpose.

Although the machine weighs about 4,500 pounds, it may be raised or lowered in the movable framework which surrounds it. The machine, when raised, is supported by four chain hoists, which may be seen in the picture. These chain hoists are attached to an equalizer arrangement which assists in keeping the machine level while being raised. The

be moved with the refrigerator hoisted in the air, or it may be moved in a kind of a "walking" process by first moving the framework then hoisting the refrigerator and moving it.

In duplicating nature as nearly as possible, the tests were made at night as this is the time when frost occurs. A crew of four men handle the outfit in the field, which was planted especially for this purpose in such a manner that the machine will cover four hills at a time. Each frosting test requires 20 minutes for moving and two hours or more for the test.

The refrigerator box, which measures about 8 ft. square and 10 ft. high, is constructed of two-inch cork board covered inside and outside with "Homasote," a commercial wall board. All joints and bolt heads are covered inside with "Hydrolene." It was found that the bolts conducted considerable heat into the box from the outside before the "Hydrolene" was applied.

The refrigerating equipment, which was sold and installed by the Illinois Power and Light Corp., consists of a Servel type 50A refrigerating unit, using methyl chloride, and equipped with a ¾ h.p. motor. There are two cooling coils of ½ inch extra heavy galvanized iron pipe hung on opposite sides inside the box. Each coil is approximately 54 inches high, consisting of 18 spiral loops, 3 inches apart, wound somewhat in the shape of an elongated oval 4 inches wide by 60 inches long. To protect the corn plants from coming in contact with the coils a wire screen covering is provided.

The temperature in the box is controlled within a range of two degrees by means of a motor control switch, electrically connected to a Mercoid lever type switch, which operates in conjunction with a Honeywell motor temperature control, which in turn is connected to a Honeywell thermostat installed in the center of one side in the box. To prevent stratification of the air within the box

a small fan is installed to keep the air moving.

As may be seen in the picture, the meter, refrigeration pumps and the condenser are permanently mounted on a shelf attached to one side of the box. Temperature recording instruments are also installed on the machine for keeping a record of the temperature along with the record of the moves and other data so necessary in the experimental work.

On one side of the box a small window is provided to permit the inside humidity to be read without opening the chamber. On the opposite side a door is provided to permit persons to enter and make observations.

Electric lights are installed on all sides of the box to facilitate the moving at night and also permit the making of accurate records. Electric power is supplied to the motor and lights through five hundred feet of heavily insulated cable, and nothing is required to be disconnected in order to move to each test position.

The sacks on the ground shown in the picture are filled with sawdust to act as insulation against the heat from the soil. In operation the machine is able to lower the temperature at an average rate of about ½ degree per minute.

This machine will not only be used in the fall experiments on large corn plants, but in the spring as well on young corn plants. Other uses for the machine appears to have developed as a large pineapple company in the Hawaiian Islands is contemplating experiments on the cold resistance of pineapple plants with a machine which will be made similar to this one, and tests are to be conducted in the United States on the effects and injury to oats, wheat, and barley by frost in the spring.

There are vast possibilities in the work Dr. Holbert has undertaken and it is rather unique that electric refrigeration should be called upon to play so important a part in such a worthy work.

RECOMMENDS STAMPING PERFORMANCE DATA ON NAMEPLATE OF CABINET

Is a refrigerator a piece of furniture, to be chosen for its looks alone; or is it, as the engineer will tell you, a machine which has a job to perform? Traditionally, refrigerators are bought on the basis of price—low price, which is judged mainly by appearance. The quality product, which is designed to do the job of properly preserving food, to the despair of the makers, often goes unsold.

The urge toward the establishment of a relation between value and price in refrigerators came from several women's organizations, notably the American Home Economics Association, acting through the American Standards Association. At the suggestion of engineers, the American Society of Refrigerating Engineers has set about to evolve a scheme which works in other classes of merchandise—electric motors—and sounds plausible for refrigerators. Through a committee on refrigerator performance it has proposed the establishment of nameplate data, covering the simple facts of the behavior of the product; i. e. temperatures obtainable and amount of ice required to get them. To arrive at such determinations, by simple test, also requires standard test procedure.

Such data decided in an agreed way promises to show the value of a refrigerator very quickly. It will enable the maker to sell a better, more costly article and give the buyer a chance to obtain a machine, cheaper to operate, yet better for his food.

The committee is about to make definite recommendations as a proposal for a standard of the Society. Pursuant to this, a considerable amount of information was collected and printed on the methods of testing refrigerators. This appeared in the November issue of *Refrigerating Engineering*. The committee is composed of nine men intimately concerned with laboratory work in this field.

WISCONSIN DISTRIBUTOR HANDLES VARIED NEEDS

Recent installations made in Wisconsin by the Morley-Murphy Co., distributors of General Electric refrigerators, and its dealers, have met a variety of applications.

St. Michael's Hospital at Stevens Point, Wis., equipped its laboratory with a General Electric refrigerator to store drugs and serums. A large size refrigerator was installed in the Domestic Science department of Central State Teachers' College at Stevens Point.

The Home for the Aged at Wittenberg, Wis., installed a refrigerator to take care of the needs of sixty people. A large size General Electric refrigerator was installed in the Kewaunee County Poor Farm.

St. Joseph Utility Reports 29 Units Sold During December

The new business department of the St. Joseph Railway, Light, Heat & Power Co., St. Joseph, Mo., reports that it sold twenty-nine electric refrigerators during the month of December. Merchandise sales for that period amounted to \$40,632 and H. S. Nelson was high salesman with sales totaling \$4,379.80.

SAYS COORDINATION IN SELLING ACTIVITIES IS ESSENTIAL FOR SUCCESS

Coordination of all selling activities has helped the sales of General Electric refrigerators, explains an article entitled, "Coordinated Selling, the Keynote of Success," by E. H. Campbell, manager of the sales promotion department of Rex Cole, Inc., New York distributors of General Electric refrigerators, in the current issue of *Electrical Manufacturing*.

Advertising, sales promotion, and selling methods, he points out, have been worked out to meet the needs of a market comparatively little versed in the necessity for refrigeration, let alone for proper food preservation. Assistance in these activities is available to every distributor, dealer and salesman, so that a unified program supports the campaign.

Outlining the policies pursued by the Cole organization, Mr. Campbell showed how its activities are thoroughly departmentalized to the end that each field may enjoy skillful and undivided attention. "Advertising and sales promotion," he said, "must furnish to the salesman a market sufficiently aroused to the need to allow him to concentrate his efforts upon convincing the prospect of the product he offers. Local advertising is planned to tie up with the national campaign and institutional advertising copy has been generally employed."

In regard to sales promotion, Mr. Campbell says that it should supplement the advertising by uncovering prospects who have reached the "interested" stage. The messages are adjusted to the season and are designed to bring home to the prospect arguments on every phase of the subject. Special campaigns, window displays, billboards, signs, and expositions, serve to round out the promotion activities and tie-up with the national campaign.

DES MOINES FRIGIDAIRE SALES GAIN 200% OVER 1927; NORGE PREDICTS DOUBLE SALES IN 1929

The Frigidaire branch at Des Moines shows an approximate gain over 1927 of 200 per cent in total business for 1928, according to officials of the Des Moines branch. Increase in business by month as compared with last year varied from 100 to 250 per cent.

Officers of the Norge Electric Refrigerator Co., 319 W. Court Ave., Des Moines, Iowa, estimate that they will double the business of 1928 in 1929. They predict that 1929 will be a banner year for the entire industry.

G. R. Pizarro Named Copeland District Manager

G. R. Pizarro has been appointed district manager by Copeland Products, Inc., Detroit, in charge of the Mid-West territory. Prior to joining Copeland he was associated with Kelvinator Corp. and Frigidaire Corp.

LASSEN — TEMPERATURE — PRESSURE — CONTROLS

POSITIVE RANGE AND DIFFERENTIAL ADJUSTMENT
NON-DETERIORATING MERCURY TUBE SWITCH—MEET ALL REQUIREMENTS
GOODNOW & BLAKE MFG. CO. 3840 BEAVER STREET DETROIT, MICH.

There's The Wrong Way and the Webb Way . . . and the Slingabout will slice your delivery costs

WHEN you deliver your refrigerators in the Slingabout you save time, trouble and expense. Lessened labor charges. No scratching and marring of highly finished, beautiful surfaces. No mess to be cleaned up from the sales floor or the consumer's home when the refrigerator is unpacked.

Just slip it on—pull the buckle straps tight—and the job's finished. That's all there is to packing a refrigerator in a Slingabout.

And safe! The soft, "scratchless" flannel lining of the Slingabout protects the finest finishes. Its thick padded jacket safeguards both refrigerators and homes against the carelessness of movers. Its strong harness will lift twice the weight it is intended for.



Write us for further information about this modern, efficient delivery help. Just tell us what line you handle, and we will quote you prices. The Charles J. Webb Company, 116 Chestnut Street, Philadelphia, Penna.

Webb Slingabout

? Why glue ice cubes to metal

FOR SALE

Two car loads Servel Electrolux, Gas operated refrigerators at less than dealer's prices.

EMPIRE ELECTRIC MACHINERY CO.
JOPLIN, MISSOURI

KERO TEST

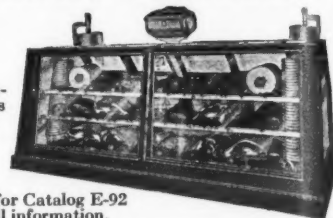
FORGED BRASS VALVES for Mechanical Refrigeration

Quality Shut-off and Cylinder valves in any standard designs or to your specifications.

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THESCO DISPLAY FIXTURES

Money-Makers for 59 years



Write for Catalog E-92 and full information.

THE C. SCHMIDT CO.
Est. 1870 Inc. 1907
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Cincinnati, Ohio



The leading refrigerator manufacturers are buying

BOSLEY'S "Ice Saver" Gasket

for it is the best uniform quality insulation

Write us

The D. W. Bosley Company
1901 Carroll Ave. Chicago, Ill.

Smoot-Holman Offers Two-Tone Porcelain Display Case



The white porcelain enamel finished Kool Kase, trimmed in blue, shown in the above photograph was installed by the Automatic Refrigerator division of the Smoot-Holman Co., Inglewood, Calif. Refrigerating coils are arranged overhead in this display case and a slatted baffle board, surrounding the coils, facilitates circulation.

Dealer Takes Inventory of His Customer Contacts at Close Of a Successful Year

Reviews Twelve Months Past and Analyzes Contacts in Terms of Business Won or Lost

Fred E. Kunkel

EACH year brings its business problems to the electrical merchandiser, and standing at the threshold of a new year, it is only just and fitting that he read the tale of business won and lost, how and why; that he study his ledgers from the angle of customer contacts; that he analyze his relations with the public so that he may build up an enduring sales pyramid of success for the new year out of the ashes of past experience.

At least, so believes one aggressive contractor dealer who tried this inventory analysis plan last year with creditable success. He took an inventory of his past experiences from the human side of his business relations rather than from the merchandise on hand and equipment side of his ledger, analyzing his contacts with people in terms of business won and lost, and why and whereofers of new and repeat business, and dissected his contact methods for the purpose of building up a larger business for the new year.

He figured that the month of January and the new year would be a fitting moment in which to review the twelve months which had just passed from the angle of what the public thought of his electrical business—a survey of his activities from both a personal and a business angle, by placing himself in the shoes of his customers and viewing his business as they saw it, from service phases, the personal attention that each customer wanted and why, their peculiarities and eccentricities, with a view to striking upon the law of human averages.

In scratching the archives of memory he jotted down point after point, which he analyzed and thought about constructively. He talked with other friendly merchants about these problems and got their viewpoints. He talked with customers and asked them for suggestions on how to improve his service and his stock of merchandise, his store appearance, what they most admired in window displays. In general he did a lot of figuring on how the bulwark contact points with the public might be strengthened.

And so he jotted down point after point, analyzing complaints and noting them down in order; points that would appeal to the public such as prompt service and deliveries, moderate prices, courtesy, dependability, and how he got new business through recommendations, fair price, convenience and accessibility, circulars, personal acquaintance, telephone directory advertising.

He found out how his employees handled customers and prospects, and how they talked to them over the telephone. He kept close tab on how they reacted when a customer came into the store, what they said and what they did to satisfy and please the customer, and how those contact points could be improved upon.

He accounted for a number of delayed deliveries, of orders improperly filled, and inaugurated ways and means of checking these errors for the future.

He studied his advertising program and figured out just where he was spending money without getting adequate returns on his investment, and of ways

and means of spending his advertising appropriation more wisely with a view to getting more customers for his dollars.

He reviewed his window displays of the past, made note of his best windows and decided to repeat them again at the appropriate time. He studied his color and night lighting effects, and developed ways and means of improving on them so as to make his windows more attractive than ever before and so attract more business from passers-by.

He ascertained what real knowledge his salesfolks had of the business and developed methods of improving their knowledge at conference meetings. He kept in closer touch with the public through having his employees make regular verbal or written reports to him daily of their contacts. He studied the attentiveness or degree of indifference of salesmen and pointed out their defects to them.

He analyzed his credit and collection problems and saw that it would pay him to tighten up more on his collections instead of letting customers drag along. He educated them into prompt pay through a regular series of collection letters which pointed out to them what it cost to run a business and why it was necessary to have bills paid more promptly.

He made a careful inventory of his merchandise turnover, of swift and slow moving stock, and then standardized on certain articles, thus simplifying his inventory and cutting down on varieties stocked on the shelves. He rearranged his entire stock to add zest to the buyer's spending proclivities by getting his merchandise out where the public could see it, handle it, and thus be influenced to buy it.

He studied his service methods and figured out ways and means of promoting more friendly feeling between his customers and his business, how to confer little favors which didn't cost much but made customers feel more at home in his store and like dealing with him exclusively, and which made them come back again and again.

As a result of this inventory analysis he got a good bird's-eye view of the salient phases of his business as the public might view it, and so improved his contact methods considerably.

He worked up little publicity stunts which would help along that most profitable of all advertising stunts—word of mouth advertising, by using attractive little stickers with mottoes and slogans on them, and one-page leaflets, which he wrapped up with merchandise telling the public about his store and its service, thanking them for their patronage, giving them little facts about his business which could be absorbed and passed on to friends, relatives, neighbors and business acquaintances.

In analyzing his salesmanship methods he found so much room for im-

provement, so many things that he couldn't exactly place his fingers on but which he knew were wrong, that he made a diligent study of all selling principles, and passed the result along to his salesfolks in the shape of friendly tips, with the net result that his sales did jump perceptibly, simply by keeping his attention closer to the selling end of his business.

One principle he now follows is to pay his bills promptly and to discount all purchases, for he believes in saving money and adding it to the profit side of the ledger, so he tightened upon his accounts. He doesn't believe, like he used to, in letting the customer take all the time he wants to in paying up, and then getting all "het-up" of a sudden like when that customer doesn't pay his bills promptly after sending him a few gentle hints and reminders. He now finds that by keeping continually after customers in a nice friendly way that he does not have nearly so much trouble collecting his bills as when he used to let them run from month to month, for now he uses regular ten-day prodders which keep them stirred up and conscious about having to pay their bills.

And all of these ideas he pulled out of the cobwebbed cubby holes of past experiences, dusted them up and gave them an airing, with the net result that the year just closed proved one of the best in history, which he attributes solely to improved management methods as the result of his inventory analysis or studying human contacts in relation to his business.

SAYS ECONOMIC LAWS WOULD PREVENT PRICE FIXING BY INDUSTRY

How much the abandonment of the "gentlemen's agreement" and other similar practices has been due to the strong arm of the anti-trust laws and how much to the normal operation of economic forces may be a moot question, but it is still debated.

E. W. McCullough, manager of the Department of Manufacture of the Chamber of Commerce of the United States, holds that "gentlemen's agreements" failed mainly because they were economically unsound.

"There has been much clamor," he says in an address before the Laundry-Owners' National Association, "for the amending of our trust laws to permit industries and their organizations to regulate competition on a basis to insure fair profits, but, without questioning the honesty of purpose of such proposals, the economic impossibility of realization is readily seen.

"If an association truly represents an industry, it includes plants of all sizes and conditions. In such a grouping are the efficient and the inefficient—the high-cost factory as well as the low-cost factory. To give them equal protection prices and competing conditions must be arranged to take care of all classes. It simply cannot be done that way, for a price which would give the high-cost member a fair profit would give the efficient low-cost man too much. Even if the law permitted an association to arrange such a protection for the members of its industry, the operation of the economic law—supply and demand—would destroy such a set-up."—*Electrical Merchandising.*

SMALL MOTOR PRODUCTION JUMPS 300% IN 6 YEARS

The factory value of fractional horsepower motors produced in 1927 reached a total of \$32,504,952, according to reports made to the census of manufactures. It is estimated that nearly 3,000,000 vacuum cleaners, refrigerators, washing machines, ironers, sewing machines, oil burners and sundry other devices went with the motors made in 1927.

During 1921 less than a million fractional horsepower motors were produced. This total was doubled by the output in 1923 and trebled in 1927. During the same interval the average value fell from nearly \$17 to \$11.30.

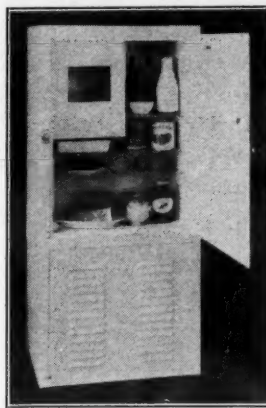
Gantt Baggott With Servel Export Department

Gantt Baggott has been appointed export department representative for Servel Sales, Inc., at the factory and general offices in Evansville. Mr. Baggott was recently transferred from the Pacific Coast division. With the Servel export department in New York City, Mr. Baggott will handle the factory contracts.

DIRECTORY

Additions and Corrections to Listings of Companies in Jan. 2 Issue

ALBATROSS STEEL EQUIPMENT CO.
1007 S. Grand Ave., Los Angeles, Calif.



Mfrs. of domestic refrigerators for electric refrigeration.

ALUMINUM CO. OF AMERICA
Pittsburgh, Pa.

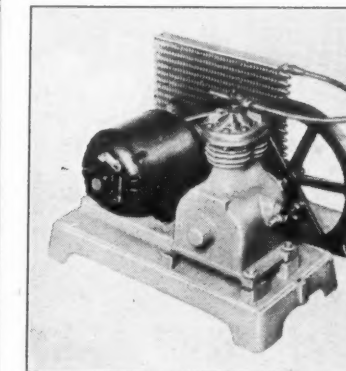
George R. Gibbons, vice pres. in charge of sales; George J. Stanley, sales mgr.
Mfrs. of aluminum stampings.

BELDING HALL CO.
Belding, Mich.

Food capacities from 5 to 15 cu. ft.
Shelf areas from 6 to 22 sq. ft.
Number of standard sizes for ice only 49.
Capacities (ice) from 30 to 200 lbs.
Following data applies only to models designed especially for electric refrigeration.
Finish (exterior) porcelain, lacquer, and wood.
(interior) porcelain and enamel.
Construction—metal. Insulation—corkboard.
Hardware by—Grand Rapids Brass Co.
Gaskets by—Bosley.

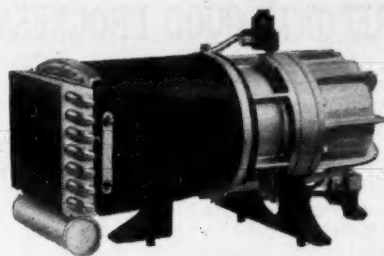
Mfrs. of walk-in coolers, refrigerator display cases for food stores.
Mfrs. of refrigerators for pantry or kitchen service, short orders, sea foods for food service applications.

FRANKLIN AIR COMPRESSOR CORP.
Norristown, Pa.



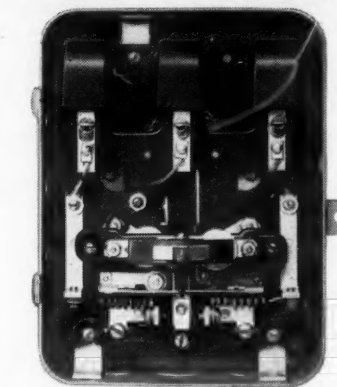
Mfrs. of compressors, cooling units and thermostats.

HOLMES PRODUCTS, INC.
2 West 46th St., New York, N. Y.



Mfrs. domestic electric refrigeration systems.

SAFETY REGULATOR CO.
529 South Mathews St., Los Angeles, Calif.



Mfrs. of temperature control equipment.

WARD REFRIGERATOR & MFG. CO.
6501 S. Alameda St., Los Angeles, Calif.
Dwight A. Ward, gen. mgr.; Harry Ward, factory mgr.; D. T. Ward, mgr. of engineering dept.
Trade Name—WARD.

Domestic Refrigerators
No. of standard sizes designed specifically for electric refrigeration—12.
Food capacities from 2.37 to 10.5 cu. ft.
Shelf area from 3.75 to 9.44 cu. ft.
No. of standard sizes for ice only—5.
Capacities (ice) from 50 to 100 lbs.
Following data applies only to models designed especially for electric refrigeration.
Finish (exterior) enamel, (interior) enamel or porcelain.
Construction—wood and metal. Insulation—Cork board.

Commercial Refrigerators
Mfrs. of wall coolers and walk-in type, also refrigerators for hotel, restaurants, and grocery. Special designs built to order.

WARNER STEEL PRODUCTS CO.
Ottawa, Kans.

C. E. Warner, pres.; A. L. Kitzelman, vice pres.; E. L. Warner, gen. mgr.; W. H. Warner, treas.; G. E. Freeman, sales mgr., adv. mgr.; H. K. Pinkerton, chief engr.; W. Judd, prod. mgr.
Trade name—SURE COLD.
High Side
Compressor—reciprocating. Drive—belt.
Seal—bellows. Refrigerant—sulphur dioxide.
Motor—1-6 to 5 h.p. Condenser—fin tube.
Method of cooling—air.
Capacities (ice melting)—25 lbs. to 1 ton.
Low Side
Flooded system.
Method of cooling—direct.
Capacity range (ice melting)—25 to 300 lbs.
Ice cubes (number)—28 to 100.

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V Belts
Motors

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Rubber Hose
Thermometers
Rubber Breaker Strips
Fan and Pulley Assembly

Nizer and Frigidaire Top Sections

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DETROIT, MICH.

? Why glue ice cubes to metal